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The Production and Management Journal Covering North America's Wood Pulp, Paper, Paperboard and Cellulose Industries

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"The Cellulose Age"

EDITORIALS

Fibber McGee and His "Invention"

Maybe the other day you, too, heard Fibber McGee having a riotous time through an entire program trying to make cloth out of paper. He never succeeded but he gave the impression that his scheme was completely screwball.

But is it so fantastic? Some of the finest textiles and fabrics are made from wood pulp. And there are paper drapes and now even paper towels that simulate cloth to a remarkable degree. Why, even the old paper collar may come back in a much improved form. Producers of polymers and of wet strength resins are looking for startling developments in the next few years that may make the present paper bag and other such items positive antiques.

Fibber McGee may never make cloth out of paper, but his idea wasn't as goofy as Molly thought it was.

Prosperity in a Great Paper City

Appleton is one of the great paper industry cities of the world, if not the greatest. It is an attractive and wholesome Wisconsin city in a rich and attractive countryside. Its citizens live a good life.

What the paper mills and the paper mill equipment companies in the Fox River Valley around Appleton have brought to the residents of that city in wealth and comfortable living is revealed in a survey by Sales Management.

The effective buying income for each of 9,200 families in Appleton is $5,760—well ahead of the $4,531 figure for the average family nationally. This means income from wages, dividends on stocks and bonds, gifts, etc. Appleton's average is also much higher than that of the North Central states ($4,896) and the state of Wisconsin ($4,660). On a per capita basis Appleton's $1,656 average income is also well ahead of the $1,289 for the average individual in the U. S.

Appleton did .0409% of the nation's retail business in 1948, with only .0218% of the population. Appleton retail sales reached $53,327,000, although total income of Appleton residents was only $52,992,000. We know, of course, that many paper mill employes from nearby towns of Combined Locks, Kimberly, De Pere, Kaukauna, to Menasha and Neenah buy in Appleton, accounting for a sales figure higher than total income. But a large percentage of employes and investors in those surrounding mills also actually live in Appleton, and they figure in the high average income.

On the basis of business activity and other factors, Appleton rates a purchasing power index of 141 for "quality of market" which is 41% above the national average.

The paper industry as a whole can point with justifiable pride to Appleton. **PULP & PAPER** extends its congratulations to Appleton and to its many readers who live in or near that little city, which is still "home" to so many papermakers all over the world.

Another Population Trend—And Paper Use

A good deal has been said in these pages about the effect of steady population growth on the continuous long term increase in U. S. paper consumption present and future. Not recalled so often, but almost equally important, is the steady march of the U. S. from a farm and rural nation to a republic of city dwellers. As recently as 1890 at least 65% lived in the country and only 35% in the city. By 1940 the figures were completely reversed: 65% were city dwellers, 35% lived in rural areas, and the trend—as any city dweller painfully knows—is still trending. It is no recent phenomenon, of course, having been in operation since 1790.

It would be interesting to know how much more paper a city dweller consumes on the average, than his country cousin. It must be very considerable, even allowing for the fact that the rural citizen is a very modern man. That big fat Sears Roebuck catalog is an example of intensive paper use.

We know farmers who carry the necessary calculations for a million dollar wheat ranch on the backs of a few discarded envelopes. A similar enterprise under operation by city folk (private or government) would require tons of paper forms in duplicate and triplicate, not to mention copies for the branch managers and for Aunt Hattie Brown in Long Beach whose husband darn it, left her his 51% of the stock.

An Idea for a Rainy Day

An interesting article in a recent Cosmopolitan magazine lists several of the little inventions that have made a million or more. Like Scotch tape and the paper cup. Then it lists some not-yet-invented-things that ought to make a million or more. One of them is a raincoat that could be discarded after emergency use and which would sell for maybe a quarter.

Seems like a good idea, and developments in wet strength resins make it appear that paper is the answer. Fearing the complications that a million dollars might bring us, we pass the notion along to research—and may the best mill win.

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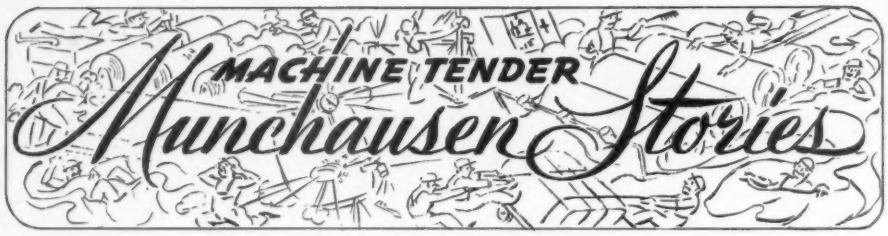

In this corner each month, PULP & PAPER publishes the "tallest tales" it can gather from pulp and paper industry men. As everyone knows there just aren't any better story-tellers. Try your hand at it—send us a story.

Maybe you will want to look up previous stories.

Last month's (page 26,Oct. issue) was from a superintendent in Tasmania, about the strange results that occurred when a mill used barn yard fertilizer for a furnish. The month before (Page 42, Sept.) the story came from a mill manager in Mexico and was about a mule-driven paper machine.

* * *

Announcement! As a special treat for our readers, this department has been promised some stories about the legendary Aberairdree Pulp & Paper Co., Ltd., of Aberairdree, Scotland, near the Isle of Mull. George Winlow, retired sales director and director of E. B. Eddy Co., Hull, Que., is an authority on this famous mill and according to him, its history goes back to biblical times.

A good many years ago Mr. Winlow (shown above) worked with A. G. (Buff) Natwick, of Crown Zellerbach Corp., Camas, Wash., at the old Lincoln Pulp & Paper Co. mill at Merriton, Ont., now operated by Alliance Paper Mills, Ltd. In the spring of 1945 the two held a reunion on the west coast and recalled their almost prehistoric association with the industry in Aberairdree.

Mr. Winlow now makes his home at 267 Chaplin Crescent, Toronto, and it was from there that he wrote to **PULP & PAPER** this story, the first of several we hope to publish on the famed Aberairdree mill, and for which we are very pleased to send Mr. Winlow our check for $5.

Mr. Winlow's Story

As you probably know, one of the prominent Pacific Coast paper executives and myself served our apprenticeship in paper making at Aberairdree Pulp & Paper Co., of Aberairdree, Scotland. This, as you have probably heard, is a very old mill. It is reported to be one of the oldest in the world and was making paper long before the Chinese could even spell the word.

I do recall one rather amusing incident, which happened there, and I must say it appeared quite serious at the time.

Our beaterman and our third assistant broke hustler was one named Malcolm McLaughlin, and he was a hairy Scot of the first water. He had no technical education but was a genius in the treatment of stock. His method of testing hydration in the beaters, was to stick his beard in. Unfortunately one of the younger "fry" had left a banana peel on the floor, and Malcolm McLaughlin stepped on it just as he was making his beard test and he took a header right into the beater, where his whiskers caught in the beater bars.

The result was that the Aberdairdree Pulp and Paper Mill ran door mats for a week!

The above may sound fantastic to you, but for its veracity, I would refer you to the executive now at Camas and I am sure he will verify it for you.

FOREST FIRES each year destroy enough pulp size trees to produce 3,250,000 tons of newsprint—enough to supply every newspaper in the U. S. for one year.

Another Victoria Meeting Planned for May, 1950

For the first time in the history of this industry, American superintendents and Canadian and American technical groups will get together for an international industry meeting on the Pacific Coast next May, probably to be held in the Empress Hotel in Victoria, B. C.

It is possible that this three-way meeting may become an annual affair, supplanting the traditional Annual Spring Joint Meeting of the Pacific Coast Superintendents and Pacific Coast Technical Section of the U. S. industry.

The comparatively young and growing Pacific Coast Branch of the Canadian Technical Section made a decisive impact as a new organization in the Coast industry in two highly successful meetings of the past year or so—first, as host to the national meeting of the Canadian Technical Section in Vancouver, B. C., last fall, and again as co-sponsor with the Coast Technical Section of the U. S. industry in a popular meeting which drew 320 to Victoria last May. In the July issue of **PULP & PAPER** we published a summary of views of many Coast leaders, virtually all of whom enthusiastically favored another meeting similar to the one in Victoria, with the superintendents also joining in the event.

New Association

Lake Erie Papermaker's and Converter's Association, headquarters at Room 105, 1200 West 9th St., Cleveland, Ohio, is the newest addition to industry associations. At a meeting in Hickory Grill, Cleveland, Oct. 7, it was organized with 128 charter members. They elected: chairman, Lew Burnett, The Ohio Boxboard Co.; 1st vice president, Bill Manor, Consolidated Paper Co.; 2nd vice president, Pete Spring, Chase Bag Co.; and secretary-treasurer, Bill Schoenberg, Lord and Schoenberg.

Next meeting: Nov. 18, same place.

COMING INDUSTRY MEETINGS

National

Packaging Machinery Mfgrs. Institute (17th Annual) — Edgewater Beach Hotel, Chicago.....Oct. 31-Nov. 2

Engineers' Conference, Statler Hotel, Boston .....Oct. 31-Nov. 3

Allied Industries' Luncheon Club—Second Monday of month, 12 noon, Commodore Hotel, New York.

Regional

Del. Valley Tech. Section — Lake Club, Spring Grove, Pa.....Oct. 28

Pacific Chemical Exposition — Civic Auditorium, San Francisco.....Nov. 1-5

Kalamazoo Valley Tech. Section—Kalamazoo .....Nov. 3

Conn. Valley Supt's.—Red Lion Inn, Stockbridge, Mass.....Nov. 5

Ohio Tech. Section — Dayton, O. .....Nov. 8

Lake States Tech. Section—Appleton .....Nov. 8

Mich. Div. Supt's. — Harris Hotel, Kalamazoo .....Nov. 17

Lake Erie Paper Maker's & Converters Assoc.—Hickory Grill, Cleveland, O.....Nov. 18

New England Tech. Section—Holyoke, Mass.....Nov. 18

Empire State Tech. Section—Glens Falls, N. Y.....Nov. 18

Pacific Coast Joint Supt's.-Technical Meeting—Longview, Wash...Dec. 6

Paper Industry Salesmen—Midston House, New York City—Every Monday, 12 noon to 2 p.m.

AFTERMATH OF DEVALUATION

Market Upturn Timely--South is Alerted

Top executives of several of the largest companies in this industry in East, West and South—both of the integrated pulp and paper type as well as those in the market pulp field—have written to this magazine expressing their deep concern over the recent devaluation of foreign currencies.

They seconded the views expressed in the lead editorial of the October issue of **PULP & PAPER** which described devaluation of European currencies as casting "a cloud over this industry," and especially those very segments which have done the most in reforestation, risking big investments in the far distant future, and also those which have done the most in creating some of healthiest and most attractive industrial communities in all of America.

Of course, one immediate result of devaluation was the loss of export markets of the domestic mills.

Pulp sales executives interviewed in New York City, the heart of pulp marketing on this continent, were quite calm after the first wave of news about devaluation. But they were also wary. By the time this issue went to press, the outlook was for at least "a breathing spell" before there might be any upsetting developments. Pulp for the fourth quarter already has been sold, and it is fortunate for the industry that devaluation occurred just at a time when the market was showing a very sharp upturn.

But the control is now in the hands of the Scandinavians, as our editorial pointed out, for at any time they can reduce dollar prices for wood pulp by a full 30% and recover the same kroner as before devaluation.

There was at least one widely discussed break in the market after devaluation when a European pulp broker drastically cut the prices of unbleached sulfite and unbleached kraft and, according to consumers, some of this was moved at the low price, but very soon afterward the general level of prices was reestablished. A temporary substantial cut in dissolving pulp prices by another company was also reported.

But an important factor to consider at present, is that very soon the Baltic Sea ports of many pulp mills will be frozen in, and except for stored pulp or other pulp from southerly ports, none will be shipped overseas from that area until April. If this is coupled with a continued high rate of demand, it is unlikely there would be any market disruption until at least next spring.

A top executive of one of the largest paper companies in the industry expressed the view that devaluation could hit the paper industry as well as pulp—in his words, it depends on how far European producers would go in order to get dollars.

Tariffs on Paper Cut

Recently at Annecy, France, the U. S. agreed to reduce tariffs on imports from 33 countries which in 1948 amounted to $212,000,000. Many reductions range up to 50% of former levels. Chemicals, paper and paper products are involved.

It is difficult to discover how much (if any) concern or influence Congress brought to bear on this treaty hatched by the State Department and signed at United Nations. Tariff schedules are available at the Superintendent of Documents, Washington, D.C., if you ask for State Department Document No. 3651 and enclose 50 cents. Sweden and Italy are two countries which will profit most by the American concession.

Other experts see possible increased imports of low-priced papers, because, as a result of devaluation, domestic pulp costs are out of line with those abroad. This could push down domestic paper prices.

L. K. Larson, sales manager of Weyerhaeuser Timber Co.'s Pulp Division, appeals to the intelligence and the good judgment of the Scandinavian producers to not demoralize the markets, in their own interest as well as that of the entire industry, in an address in which he recently made in New York (principal portions of his address in which he also discussed inventories and demand are published on page 32).

Anti-Dumping Law Proposal

A considerable opinion has been formulating in the American industry in favor of the passage of a bill by Congress that would revise and make workable the Anti-Dumping Act of 1921. Several leaderfs have expressed their approval of this move. But with Congress adjourned until winter, the domestic industry is completely helpless.

"There are several things about this situation which we have never been able to invoke and that is, particularly the matter of dumping." D. Clark Everest, president of Marathon Corp., wrote **PULP & PAPER**, in expressing approval of the October editorial. "As you will recall, all kinds of pulp and newsprint were put on the free list over 35 years ago and anything which might enter into the manufacture of a newspaper outside of presses has never been subject to duty of any sort since and, as I understand it, it is only the dutiable items which come under the anti-dumping clause."

The better geographical distribution of the American industry effected in recent years, seems to hold out some hope for the industry and its employes receiving greater consideration in Washington. This is particularly true in the South. Historically a free trade section of the country and Democratic, the South now has a great pulp and paper industry of its own and no longer represents a subservient wing of the Democratic party by any manner of thinking.

Now South Has a Stake

Several observers in this industry express the view that kraft papers, competing with the Southern products, are the most likely grades of papers to come into to the U. S. at reduced valuation. This, coupled with the President's minimum wage law, may result in lining up the South behind measures that might afford some protection to the pulp and paper industry.

Expressing the point of view of some major producers in the East as well as the South (as his company has mills in both areas), James L. Madden, president of Hollingsworth & Whitney Co., wrote: "All pulp manufacturers, whether integrated with paper mills or manufacturing for the open market, are tremendously concerned with the effects of currency devaluation on their products. I think your editorial expresses our point of view very well."

This magazine also interviewed Scandinavian representatives. They pointed out some of the factors already mentioned which indicate a favorable outlook. They also mentioned that world pulp prices had been leaning toward a common competitive level prior to devaluation and now, in their opinion, they are badly distorted when reduced to dollars. They compared Sweden's contract prices in America with the fourth quarter sterling prices in the British market. They indicate the sterling

(Continued on page 114)

SEE PAGE 68 FOR CANADIAN REACTION

"ODDS AGAINST U. S. LABOR," WRITES CONGRESSMAN; DEVALUATION EDITORIAL GOES IN OFFICIAL RECORD

The editorial published in October PULP & PAPER entitled "Currency Devaluation — A Cloud Over This Industry" has been reprinted in the Congressional Record, official publication of the U. S. Congress.

"I have been seeking for some time to have ECA Administrator Paul Hoffman obtain greater consideration for the U. S. pulp and paper industry," writes Congressman Russell V. Mack (Rep.) of Washington, in a letter in which he declared his "sentiments are the same as those expressed in the editorial."

"We have been making some progress along this line," he added, "but I fear that the devaluation move will destroy anything we may have accomplished.

"I am greatly concerned about this threat to our industries, and their employes and will do what I can to counteract or overcome this threat," the Congressman writes. "With the present administration extremely 'foreign-minded' we who favor protecting Americans against low-wage, low-living standard competition, have the odds against us."

PAPER MILL IN IDAHO

W. P. DAVIS HEADS NEW PROJECT

A new kraft paper mill as well as a new pulp mill will be built by Potlatch Forests, Inc., at Lewiston, Idaho, using largely left-over white pine and also white and red fir, larch and cedar from that company's extensive sawmill and plywood operations.

Readers of **PULP & PAPER** will recall that when first news of the plans for the Lewiston operation were published in our August, 1949 issue, it was announced that it would be a 230-ton $12,000,000 pulp mill only, presumably a kraft process.

The unexpected news that paper—probably kraft or board or both—would also be made comes in a press release from the Weyerhaeuser Sales Co., of St. Paul, Minn., which describes Potlatch Forests Inc. as "one of Weyerhaeuser's largest lumber producing units." Potlatch operates a new white pine plywood plant at Lewiston as well as three sawmills at Lewiston, Couer d'Alene and Potlatch, Ida.

The paper mill angle was a rather sensational piece of news because up to early October, only pulp plans had been publicized and the fact is that preliminary engineering had been discussed and carried on with only pulp in mind.

It is also announced that William P. Davis (right), who played a major role in designing some of biggest International Paper Co. Southern Kraft mills over many years, and who until recently was right hand man in IP to Vice President Erling Riis, chief of Southern Kraft manufacturing and engineering, has become the new president and general manager of Potlatch Forests. He already has moved to Lewiston where he will make his home.

Mr. Davis, who began his career in the South in 1919 as electrician at the Southern Paper Co., Moss Point, Miss., mill, and became its chief engineer, just three years later, rose to chief engineer of all Southern Kraft mills—eight of them from Georgetown, S. C., to Camden, Ark., and built several of the new mills. In 1941 he also became assistant to the production manager of all Southern Kraft mills, and carried on as chief engineer, with offices in Mobile, Ala. Two years later he went to New York as IP's coordinator of production and sales. Shortly afterward he became manager of the Container Division and Single Service Division, during the recent period in which IP was rapidly acquiring and building various converting operations all over the U. S.

Thus, Mr. Davis moves from positions of high responsibility in the largest paper company in America, almost twice as large as any other, to a similar high post in the nation's leading timber and integrated timber use companies.

There was no indication when the pulp and paper mills at Lewiston would be built. The impression was that the project would not be hurried, but a site on the Snake River near the sawmill is selected.

For years there have been many rumors of mills being built in the Rocky Mountain timberlands stretching from Montana and Idaho through to Colorado, and some of these projects are now in the promotion stage. Of all of the rumors and reports, it is obvious that Potlatch, with its vast holdings and the great Weyerhaeuser organization behind it, is in easily the strongest position to bring the dream of a new Rocky Mountain paper industry to realization.

In this issue we publish the first illustrated report of the first Weyerhaeuser Container board mill ever to be built—at Springfield, Ore.—and that article reviews what Weyerhaeuser has done in pulp and other fields in wood use integration. The Weyerhaeuser Sales Co.'s news release mentioned all these operations and observed that Weyerhaeuser's "extensive interests" also include "operation of The Northwest Paper Co. in Cloquet and Brainerd, Minn."

Forest area for the Lewiston mill is the area tributary to the Clearwater River. Weyerhaeuser's research men have been long seeking an answer to the problem of how best to use the mixed woods in Idaho other than white pine, which are not suitable for all types of lumber. About half of the forest cover are these other species. The company has now revealed their answer.

WOOD PULP OUTLOOK

Devaluation and Inventories

An "optimistic view of the immediate outlook for wood pulp demand" has been voiced by L. K. "Keve" Larson (right) who was wartime chief of pulp allocations for the U. S. government and who is sales manager of the Pulp Division of Weyerhaeuser Timber Co.

But, in an address Oct. 7 before a joint meeting of the book, groundwood and writing paper associations in New York, he cautioned that "the apparent decision of foreign pulp producers to maintain their dollar prices in the American market is, of course, not irrevocable."

He closed his address by an appeal to pulp and paper producers throughout the world "to exercise good judgment" and thereby "contribute to a healthier industry and a sounder world economy."

While declining to make any forecast beyond the first of the year, he listed various factors that might induce a foreign supplier to maintain his dollar prices, despite devaluation. But, he said:

"The competitive power that they have derived from devaluation may be exercised either now or later. The mere existence of this power adds a new element of uncertainty to the domestic pulp and paper outlook.

"If the present level of domestic industrial activity is not too greatly hampered by existing and threatened labor difficulties and if, as we all hope, further world recovery is generated, as it well may be, then, despite devaluation and the present level of producers' inventories, a serious unbalance in world pulp and paper markets would not, in my opinion, appear to be an early prospect," said Mr. Larson.

"The domestic pulp and paper industry is better prepared today to do an intelligent job in the face of changing and uncertain world conditions than at any time in the past. It has shown restraint during the period of inflation and flexibility and absence of hysteria during the period of deflation. The exercise of similar good judgment by pulp and paper producers throughout the world will contribute to a healthier industry and a sounder world economy."

On currency devaluation, he said:

"There has been much speculation as

(Continued on page 114)

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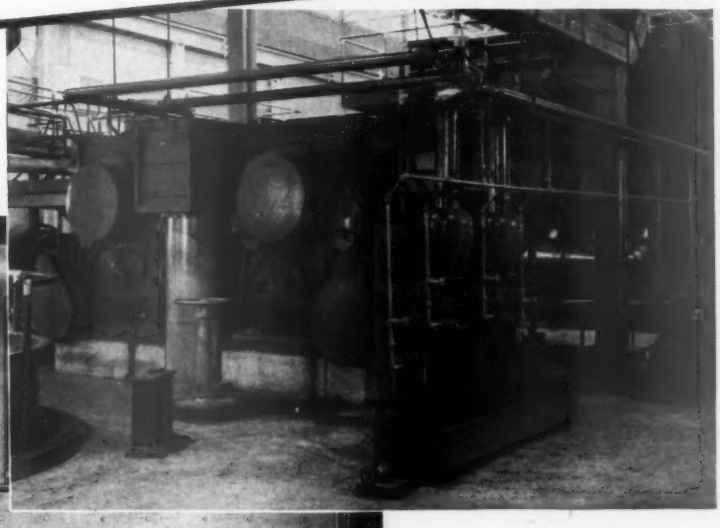

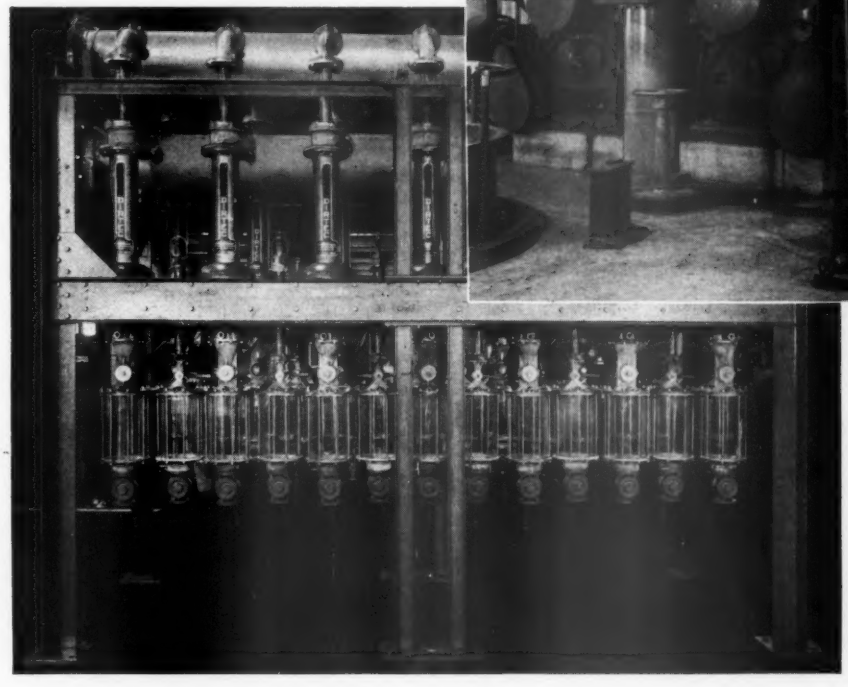

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COOSA RIVER MILL TO START

Test Runs May Be Made During November

Of prime interest to this industry in the South at the present time is the rapidly concluding construction work on the $32,000,000 newsprint and pulp supplying mill of Coosa River Newsprint Co., not far from Birmingham, Ala., and recently visited by **PULP & PAPER**.

Completion was originally scheduled for Jan. 1950, and the construction work is strictly on schedule. Testing of some phase of installation may actually begin in November. First piling was driven May 5, 1948.

Power for the mill will be drawn in part from the five unit 5000 KW each turbo-generators installed in the Alabama Ordnance Works (Childersburg) arsenal, from which source the company will also draw its water supply under lease.

Daniel Construction Co. of Birmingham, and F. H. McGraw Construction Co., Hartford, Conn., were the project contractors.

Steam power at the mill will be generated in part by a Combustion Engineering Co. recovery unit having a capacity of burning 750,000 pounds of black liquor in 24 hours to produce steam at 590 psi and 730F. The six digesters were furnished by A. O. Smith Co., four being alloy and two carbon steel lined. The pulp mill will produce stock for blending with groundwood for newsprint, and pulp for the Kimberly-Clark Corp. use. K-C has built the mill and will operate it and share ownership with a group of newspapers, principal owners.

The 1100-ft. long by 250-ft. wide main building will house two 300-ft. long Beloit paper machines. Allis-Chalmers Mfg. Co. equipment includes all-purpose motors, power conversion substations and lime kiln. The Paper Machinery, Ltd., of Montreal, has furnished S.F.-Flakt dryers.

Production will be a precise matter, the Coosa plant having already been cited as an outstanding example of modern instrumentation, opening the way to more paper products and utilization. Much of the instrument installation comes from Brown Instrument Division, Minneapolis-Honeywell Regulator Co.

Other important installations in the mill include pulp mill equipment of Improved Paper Machinery Co., The Dorr Co. causticizing equipment, and Link-Belt Co. conveyors.

Located some distance from the town of Childersburg, from which the wartime arsenal took its name, the mill has established a post office of its own, "Coosa Pines, Ala.," and maintains unusually attractive and comfortable quarters for visiting top company personnel.

Top management and supervisory personnel at the mill include: A. G. Wakeman, executive vice president; William E. Hornbeck, resident manager; J. D. Dailey, pulp mill supt.; A. J. Crittenden, paper mill supt.; C. C. Lande, plant engineer; George Koons, personnel superinendent; M. D. Behnke, purchasing agent; Ernest Manders, technical superintendent; James Buck, power superintendent; John Raeburn, woodlands manager; J. Moynihan, groundwood superintendent, and John Thurner, woodyard superintendent.

SIDE VIEW OF NEW COOSA RIVER mill. See our cover for frontal view, taken from road at left side of this picture. These are first pictures of new mill by PULP & PAPER.

OUR COVER PICTURE

Of principal interest in this industry in the South at the present time is the rush of work to carry to completion two new and important mills — the Coosa River Newsprint Co. mill at Coosa Pines, Ala., and the new International Paper Co. hardwoods-purified cellulose mill at Natchez, Miss.

In a recent issue we carried a picture taken by our Southern editor of the mill at Natchez, which is coming along almost as fast as Coosa River; in fact, it's only a few months behind it. Coosa River should start up in January.

Our cover picture this month shows the new Alabama mill, built and to be operated by Kimberly-Clark Corp. The stack rises above the new recovery plant, housing Combustion Engineering recovery boiler. In foreground of picture is the 600 ft. Link-Belt pulpwood conveyor. Kraft pulp, screen room and paper mill building are at right — a part of the 1100 by 250-ft. building housing two new Beloit newsprint machines showing at extreme right.

Newsprint Record!

North American production of newsprint in August, 1949—522,000 tons—exceeded that of any August on record. Total continental production increased 214,961 tons, or 5.6% in the first eight months of 1949 over that period in 1948, and also was greater than in any preceding similar period.

ERNEST MANDERS, now Technical Director, Coosa River Newsprint Co. kraft pulp and newsprint mill at Coosa Pines, Ala. He is graduate of Univ. of British Columbia; was Tech. Director at LongLac kraft mill of Kimberly-Clark in Ontario. Formerly at Ocean Falls, B. C. and KVP, Ltd., Espanola, Ont. In September we reported J. D. Dailey, also ex-LongLac, is Kraft Supt. at Coosa River.

Labor Issues Settled In Coast Industry

Labor issues has been settled peacefully again in the Pacific Coast industry and the 15-year record of successful negotiation continues. It was broken only by one unsuccessful CIO strike during the war in an individual mill—and the Pacific Coast Association of Pulp & Paper Manufacturers and the AFL unions could not prevent it.

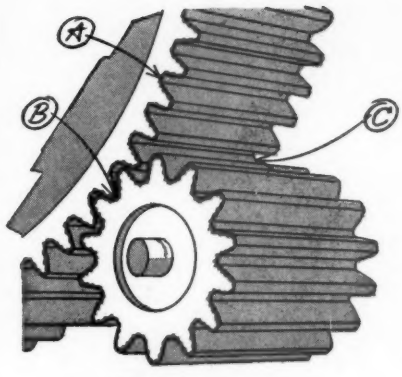
Referendum votes in 43 locals in Washington, Oregon and California mills have endorsed the agreement reached in Portland, Ore., in September covering 35 mills and 15,000 employes. It liberalizes eligibility for holiday pay, vacations and night differential pay. More employes will get the night differential and more may be eligible for holiday and vacations.

The wage structure, unchanged, was extended to June 1. Basic rate for males is $1.42½ per hour; for females, $1.16½. The average hourly pay of $1.76½ is from 30 to 45 cents higher than in any other section of the U. S.

PROMINENT IN INDUSTRY NEWS (left to right): DR. RUSSELL M. PICKENS, New York, elected Vice Pres. in charge of Sales for Rayonier Inc. with mills in Far West and South. He joined Rayonier 19 years ago after being with DuPont in rayon and cellophane fields. For years, he was Techincal Director for Rayonier and was Technical Sales Director since 1944. He graduated from Montana State and received M. S. and Ph. D. at Iowa State.

MARK E. SANFORD, promoted from Resident Manager of Antioch, Calif. mill to General Manager of Operations for all Fibreboard Products Inc. mills and converting plants. He succeeds R. E. Bundy, who, as we reported last month, advanced to the position of Vice Pres. in charge Production, succeeding N. M. Brisbois, who retires under the company retirement plan.

Case 1142—Reducing Frictional Loss on Low-Speed Open Gears



LOW-SPEED OPEN GEARS

Extremely heavy shock loads on an open bull gear did not displace the tough lubricating film maintained by Calol Pinion Grease. Recommended for all heavy-duty open gears such as those on hoisting units, cranes, power shovels, and some grease-lubricated enclosed gears. Comes in four grades, each increasingly more adhesive: Nos. 0, 1, 2, 5.

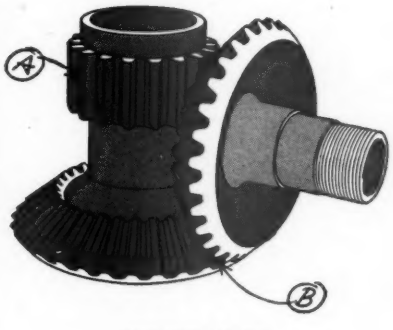
A. Sticks tight wherever applied — prevents excessive waste especially where gears move very slowly or are idle part of the time.

B. Cushions and lubricates — takes up slack between teeth and increases gear efficiency.

C. Very high viscosity but with oil-like consistency — flows back into place after being displaced by gear teeth.

Calol Pinion Grease is fully water-resistant. This assures lubrication on gears operating outdoors in wet weather or in other heavy moisture conditions.

Case 1104—Keeping Lubricant on Open Drive Gears



OPEN DRIVE GEARS

Calol Gear Lubricant did not throw off open drive gears operating at high speeds. Maintaining a constant heavy lubricating film on gear teeth, it reduced noise and wear from the shock loads. Also recommended for the lubrication of wire rope and cable.

A. Extremely adhesive — sticks tenaciously to gear- and pinion-tooth surfaces . . . stays between wires and in hemp centers of wire ropes.

B. Resists pressure and provides a tough, cushioning film — prevents metal-to-metal contact on gear teeth and reduces friction on wire rope strands.

Calol Gear Lubricant is made from selected crudes and contains a non-inflammable solvent which lightens its consistency. This solvent, which evaporates quickly after Calol Gear Lubricant is applied, permits the lubricant to be spread on gears easily and promotes penetration of wire rope and cables.

Trademarks Reg. U. S. Pat. Office

STANDARD TECHNICAL SERVICE will make your maintenance job easier. If you have a lubrication or fuel problem, your Standard Fuel and Lubricant Engineer or Representative will gladly give you expert help; or write Standard of California, 225 Bush St., San Francisco 20, California.

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Top Execs Talk Wood

Wisconsin Leaders Exchange Views

An unusual woods tour and meeting of top Lake States pulp and paper executives with their foresters was held in Tomahawk, Wis., and its vicinity, Sept. 28 and 29, by the Forestry Committee of the American Paper and Pulp Association.

It was an inspiring meeting because there was no wasted motion in speeches where forestry men and top-level executives spent a lot of time trying to convince each other or in generalities. Each talk was predicated on the tacit assumption that "we know what is our common goal in tree growing, now let's look at the record." There was, as a result, genuine confidence that tree growing will continue to increase itself.

Attendance was from 10 states. The meeting was not national in intention, but very national in its scope of experiences in tree growing.

D. Clark Everest, president of Marathon Corp., reviewing the two-day session, said: "This whole thing is so basically sound and fundamental that no one should have to be told or convinced of the necessity for augmenting our raw material supply.

"It may be done through research and technical developments and the utilization of other species, but, whatever help we have from that direction, we still have the necessity for growing good old fashioned trees with which we are familiar and which have been the backbone of this industry."

PARTICIPANTS in Forestry Meeting in Wisconsin (l. to r.): Top—D. CLARK EVEREST, President, Marathon Corp.; CHARLES SAGE, Vice President, Kimberly-Clark Corp.; STANTON MEAD, Vice President, Consolidated Water Power & Paper Co.; NORMAN STONE, Vice President, Mosinee Paper Co., and JOHN ALEXANDER, President, Nekoosa-Edwards Paper Co.

Bottom—S. B. COPELAND, President, The Northwest Paper Co.; E. G. AMOS, American Paper & Pulp Assoc.; FOLKE BECKER, President, Rhinelander Paper Co. and C. J. McLAREN, Vice President, National Container Corp. of Wisconsin.

The Mosinee Program

Norman Stone, vice president and general manager, Mosinee Paper Co., explained that the Mosinee mill is situated in a county that is mostly agricultural and not studded with pulpwood supply. It's forest growing area is 160 miles from the mill and consists of 68,000 acres.

The seeding began in 1929 and greatly expanded in 1942. Some areas are not productive due to terrain and soil. A fire affected some of the program. Of the planted area, 68% is now producing jack pine.

The forestry program of Mosinee is planned on four cycles of cutting. Until 1956 Mosinee will be cutting 2600 cords per year. For the next 20 years, cutting is planned to provide 8,000 cords per year. The next 15-year cycle will see 18,000 cords yielded per year and by 1991 Mosinee will be up to their perpetual yield norm of 20,000 cords per year.

Costs for this project indicate that Mosinee will be paying $2.65 a cord from planting period through to the time the cut pulp log is taken out. Obviously future sharp declines in dollar values could effect this price.

He brought out another interesting figure. Looking at the project as an investment, this firm expects to realize 3%.

Kimberly-Clark Experience

Charles H. Sage, vice president of Kimberly-Clark, sharply focused the fact that the men charged with the direction of forestry programs can't just say that they will buy acreage and go to tree farming and then walk into the executives offices and blandly ask for huge sums of money. He told of the capital investment in acreage and personnel as a starter and said it "calls for real imagination to explain to hard-headed executives how this program will work financially years in the future." Kimberly-Clark will use one million cords of pulpwood next year from middle North America. He told how supply has been aided in his time by the increase in use of species from two to seven and he predicted further increase.

Consolidated's Forest Philosophy

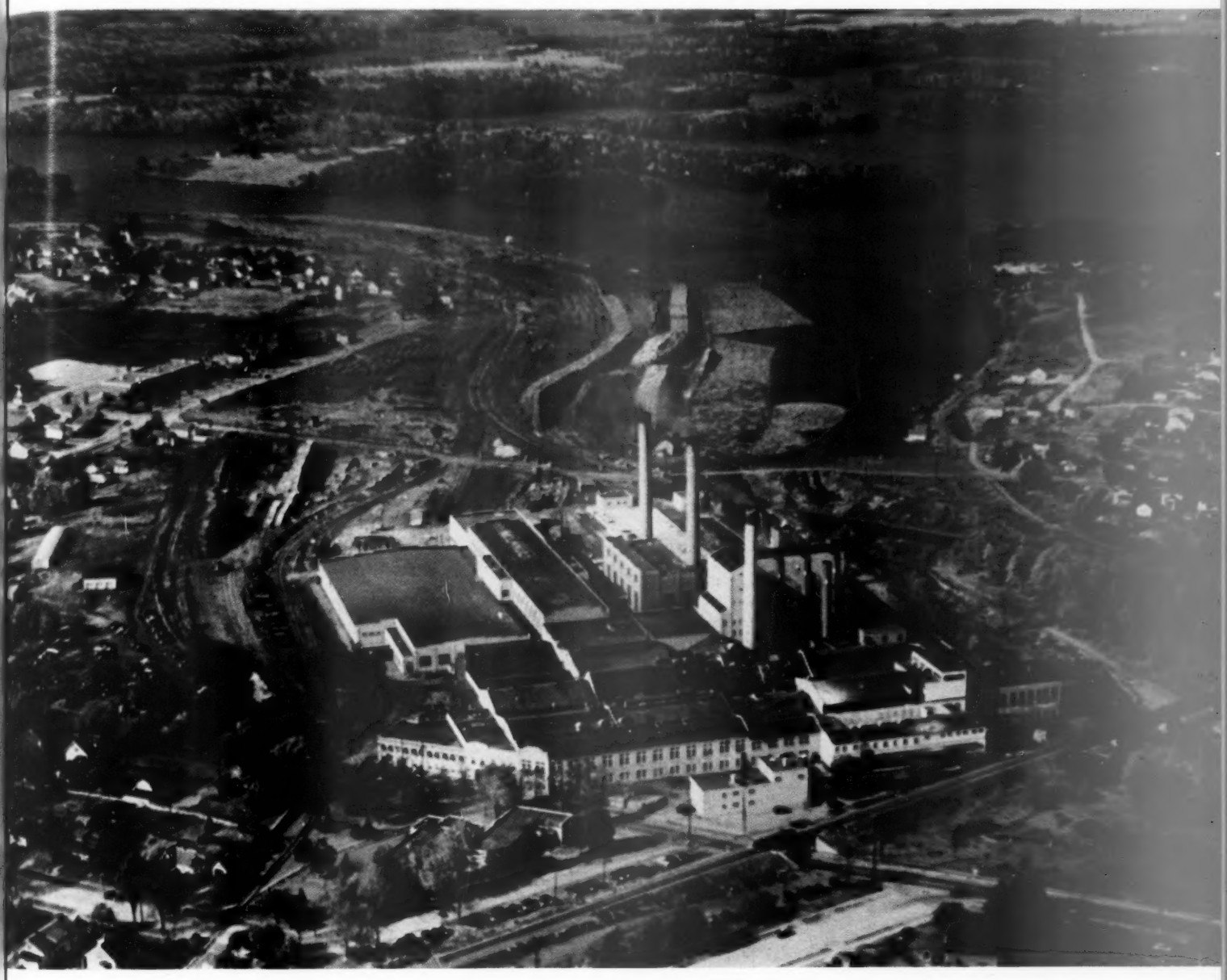
Stanton Mead, vice president and director of manufacturing, Consolidated Water Power & Paper Co., Wisconsin Rapids, had a number of large charts showing the various forest holdings of his firm and had them colored to indicate natural growths, plantings and surrounding ownerships. It was a very informative presentation and well-illustrated.

In discussing the philosophy behind his company's forest policy he told a story that is axiomatic of the entire trend in industry. The company's first purchase and operations in tree planting and farming were more on the altruistic side than from a long-range practical standpoint. Mr. Mead traced the periods of change in Consolidated's forestry planning along with the general change from the "cut-out and get-out" practices of other days.

Mr. Mead said, that while there is hazard in prophecy, there are certain truths that make capital investments in tree farming sound. He said that trees increase the value of property and that land values in Wisconsin are bound to increase in the future. As an added incentive to forestry programs, Mr. Mead feels that it is a good stabilizer because

(Continued on page 98)

Rhinelander: Glassine and Greaseproof



In the heart of Wisconsin's woodlands, Rhinelander Paper Company is attaining new production peaks in the manufacture of high-grade glassine and greaseproof papers. Working side by side in the harness are "The Big Swede" and "Ripco Maid"... big modern Beloit machines, leaders in Rhinelander's notable seven-machine team. Beloit has been serving this company since 1903, when the No. 1 and No. 2 machines were built.—*Beloit Iron Works, Beloit, Wisconsin.*

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A NEW TYPE OF MILL

PROGRESS AT CELANESE PULP PLANT

Apparently the only new sulfite mill in the world and one of the most interesting—now under construction—is that of Columbia Cellulose Co., Ltd., wholly owned Canadian subsidiary of Celanese Corp. of America, at Watson Island, near Prince Rupert, B. C.

More than 700 men are now employed at the site and engineers hope that the plant will go into production early in 1951. Plans call for 200 tons of high alpha pulp (acetylation grade) daily by a purification process developed by Celanese engineers. Main purpose will be to supply pulp for cellulose acetate textile fibers and plastics in the plants of Celanese Corp. of America.

Ultimately the Watson Island area may become the center of a diversified forest industry, with Celanese Corp. playing an increasingly important part in the integrated utilization of British Columbia wood species.

The mill is about eight miles south of Prince Rupert, the principal seaport of northern British Columbia, western terminus of the Canadian National's northern line and headquarters for the halibut and other fisheries. The people of Prince Rupert have welcomed Columbia Cellulose and its assurance of a steady payroll and year-round industry.

The Canadian National's main line sweeps south from Prince Rupert and passes within a few yards of the mill on its way to the Skeena Valley and the east. The jackladder that will haul wood from the log pond to the mill will actually pass over and above the railroad. Watson Island is really part of the mainland and is connected by road wtih Prince Rupert. It was used for storage and shipment of military supplies used by the U. S. Army for Alaskan wartime operations. Most of these buildings have been removed, but the pulp company will make use of some facilities, such as the dock.

With all its natural advantages—tidewater location, access to raw material, power and fuel as well as limestone and some of the required chemicals—the site is practically ideal. But basically, the construction project is a pioneering job in one of the pulp industry's most remote frontiers.

Water Problem

One engineering problem was laying a seven-mile pipeline from Prudhomme Lake to the mill and the clearing more than 15 acres for the site. The pipeline passes through three tunnels, 5 ft. by 7 ft., with a combined length of 5700 feet, largely through solid rock. It will be finished next year. This pipeline represents the only important natural handicap which had to be overcome. It required storage and use of waters of a whole chain of lakes—Prudhomme, Taylor, Diana and Rainbow—but it was the company's best guarantee of an ample and high-quality supply of water.

THIS IS JUST A POSTCARD AIR VIEW our editor picked up in a Prince Rupert shop but it shows Watson Island, site of new pulp mill, how it is connected with mainland, and especially how Celanese will utilize the left-over wartime U. S. Army concrete dock, connected at both ends with the island by curved trestle viaducts. Notice how this forms a mill pond which is capable of holding 5,000,000 ft. of logs, in an area of 50 acres. This picture was taken before mill work had progressed.

The site clearing called for removal of about 500,000 cubic yards of rock. The mill and auxiliary operations are to be laid out on two levels, each now bulldozed, graded and terraced by the contractors, B. C. Bridge & Dredging Co. and Macco, Ltd. On the upper terrace will be wood preparation and power plants. Below will be the main mill buildings, pulp storage shed, digesters, chip storage, office and transport facilities.

The storage shed and office are approaching completion and a start made on other units. Structural steel is supplied by Dominion Bridge Co.

New Construction Features

An interesting feature of construction is the use of pre-cast concrete slabs for the so-called "sandwich walls" and roofing. Walls will have a layer of Foamglas insulation supplied by Pittsburgh Corning Corp., ingeniously held between two layers of concrete made in panel form. The full-sized panels first were tested at L'Ecole Polytechnique in Montreal. The slabs are being cast at a streamlined plant within a few yards of the buildings under construction, using materials fabricated under contract with the Toronto firm of Creaghan & Archibald, Ltd. The company's engineers claim that these sandwich walls speed construction during adverse weather conditions and permit savings in foundation, erection, handling and skeleton frame costs. The use of the precast slabs in the roof is said to be much cheaper than the conventional pouring method.

Installation of underground sewers and water mains is well advanced. A unique feature of the 54-in. sewer pipes is that they have been tile-lined by a process developed at Watson Island by Celanese engineers. The company's own planning mill is at the site.

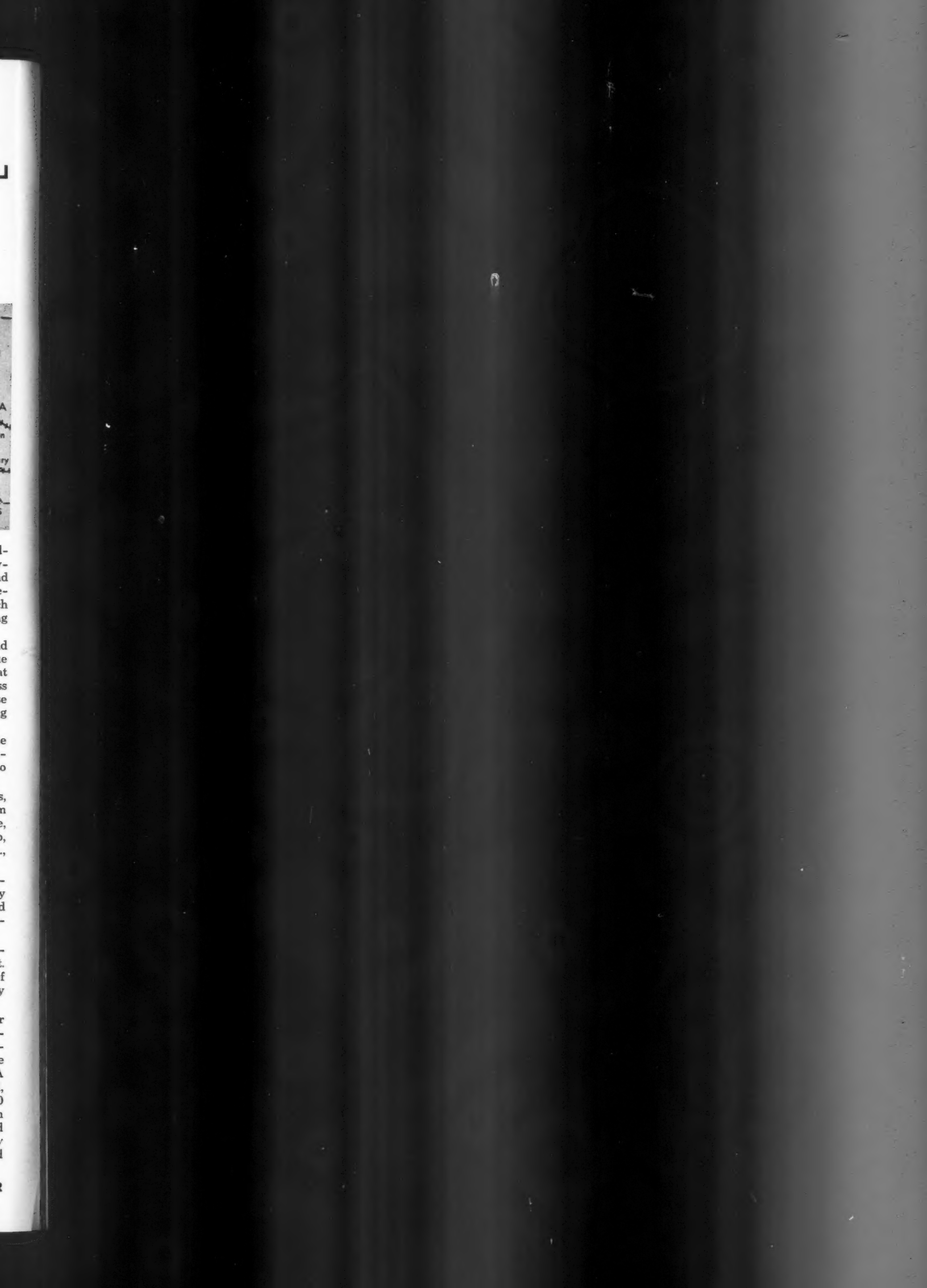
It is still too early to give a complete list of the major suppliers, but the company has announced that, in addition to contracts previously mentioned:

Foster-Wheeler Co., St. Catharines, Ont., will build the 650 lbs. pressure steam generating units; Canadian Westinghouse, the unit substations; Worthington Pump, the turbines, and Dominion Bridge Co., the five digesters.

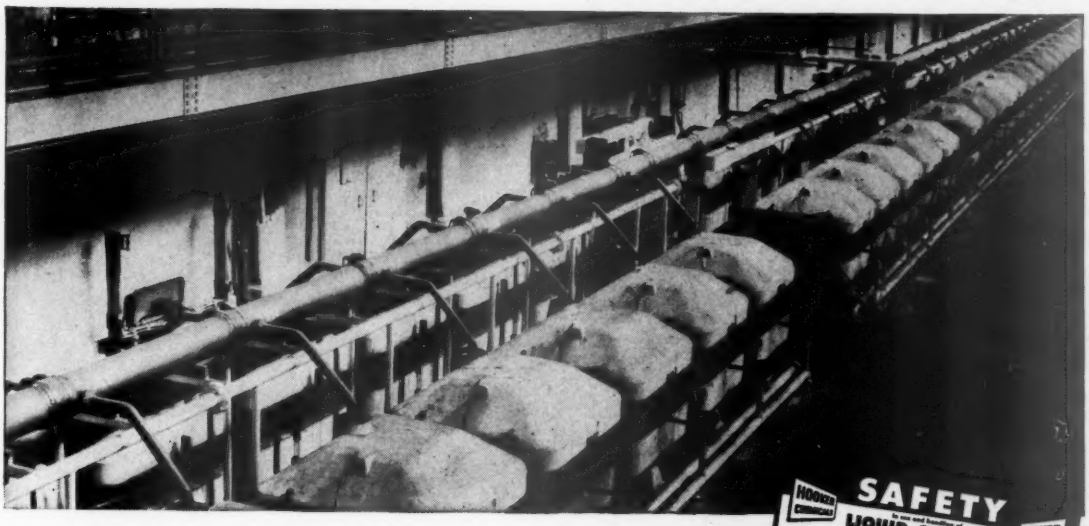
Instead of several chip bins, a single-unit chip storage building designed by Stadler, Hurter & Co. of Montreal and New York, with modern conveying machinery, will be used.

Power and process steam are to be generated in a coal-burning power plant. This will have high pressure boilers of 500,000 pounds per hour steam capacity and two 7,500 KW turbo generators.

In an enterprise such as this timber supply has been a fundamental consideration. The company obtained the first forest management (sustained yield) license to be issued by British Columbia. A planned continual supply of pulpwood, will include 60% hemlock. About 1,000 square miles of timber are embraced in the license holdings in the Skeena and Naas River watersheds. The company will have access to independently held



Careful Buyers of Caustic Soda and Chlorine
SPECIFY HOOKER



The Columbia Cellulose Company Ltd. has specified Hooker to supply its requirements of caustic soda and chlorine for its new dissolving pulp mill at Watson Island, B.C.

In the Hooker Electrochemical Company you have a dependable source for caustic soda and chlorine of high quality and constant uniformity. This is testified by the increasing number of users who year after year continue to secure their requirements from Hooker.

They have learned through experience that they can rely on these products of the famous Hooker "S" Cell. Produced under watchful control, each shipment is of the same uniform high quality. Through careful inspection and care of containers it reaches you in the same condition it leaves our plants.

For uninform processing from uniform Liquid Chlorine and Caustic Soda, specify Hooker.

Users of Chlorine will want a copy of the Hooker Wall Chart, "Recommendations for Safety in the Use and Handling of Chlorine in Cylinders and Ton Containers". Printed in large readable type on linen backed paper, it is ideal for mounting wherever you use or store chlorine.

From the Salt of the Earth

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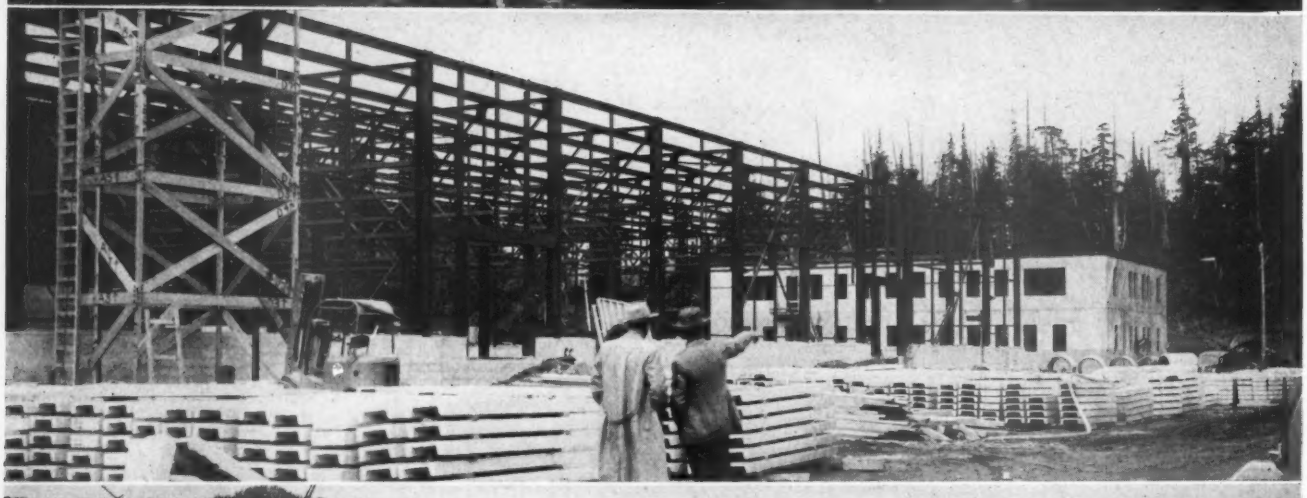
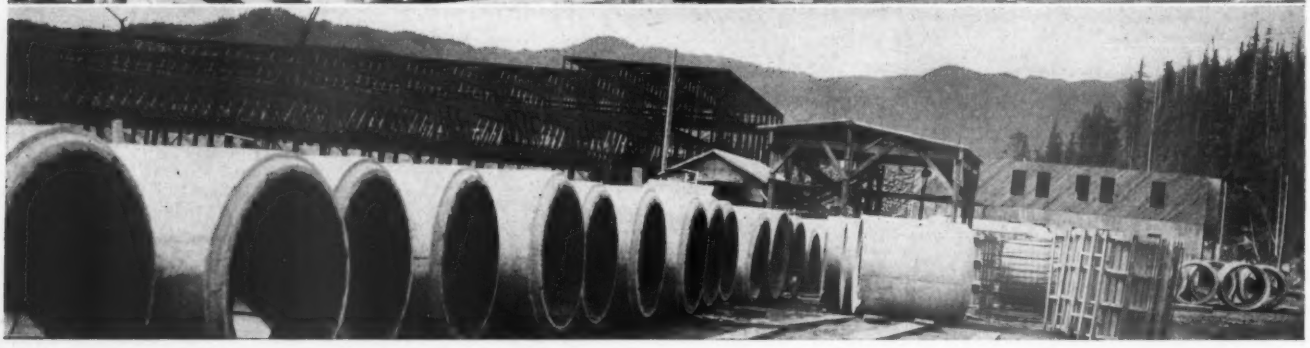




GENERAL VIEW OF COLUMBIA CELLULOSE CO. project (above) at Watson Island, B. C. In center is still work for the pulp storage shed; at left, aggregate plant. Partly finished structure is office building. Pulp mill and power plant will be on level above these buildings.

Next view shows pre-cast concrete slabs used in construction. They are laid on steel work as base for the roof and with Foamglas insulation material for walls. This type of construction eliminates costly concrete pouring operation; saves time as well. Office building in background.

Below are tile-lined sewer pipes 54 inches in diameter, especially designed by Celanese engineers. Structural steel for pulp shed in background.

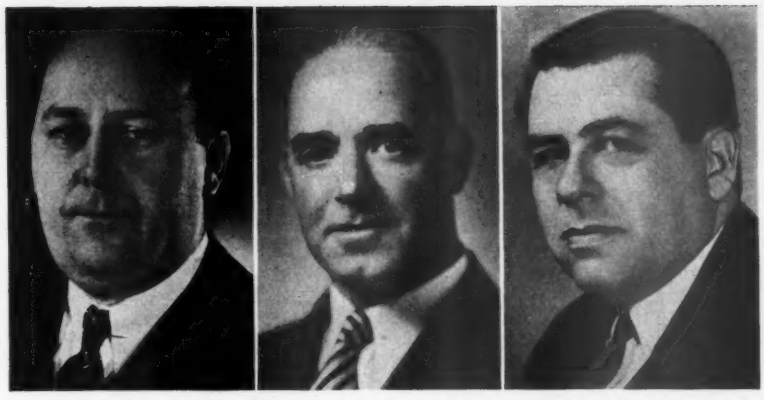
timber along the Skeena, logged under contract.

The woodroom will be fed by a steel jackladder in two sections with separate power units. The jackladder will haul the logs up and over the mill terrace level from the pond.

Canadian Sumner Iron Works, Vancouver, B. C., is supplying a Bellingham-type whole log hydraulic barker designed to handle logs from 10 ins. to 5 ft. in diameter and from 8 to 24 ft. long. It is expected that the barking plant will average 500 cords per 16-hour day, averaging 35 cords an hour.

Similar capacity has been assigned the Sumner 153-in. six-knife whole log chipper which will produce ⅝-in. chips from hemlock, cottonwood and spruce logs up to 36 ins. in diameter. Sumner supplies conveyers, cutoff saws, loaders, kickers, 10-ft. band mill, with automatic air-operated log carriage, chip feeders, refuse hogs and speed reducers.

Columbia Cellulose owns the whole of Watson Island's 200 acres excepting the railroad right-of-way and will develop its own land-locked harbor. The dock is concrete decked and arc shaped, connected at both ends to the island by curved



HAROLD BLANCKE, President; GEO. H. RICHARDS, Vice Pres. and Treas.; GEORGE SCHNEIDER, Vice Pres. in charge of Research, Celanese Corp. of America officials.

trestle viaducts. This provides a mill pond of about 50 acres where over 5,000,000 feet of logs can be stored.

Paper Machinery, Ltd., Montreal, is supplying two pulp drying machines, consisting of a Kamyr wet machine section with felt presses. On the wet side there will be a cylinder mould, felt press, predryer and another felt press. In the Flakt dryer there will be a cylinder mould, the width being 100 inches, the only one of its kind on the continent. Working width is 135 inches. Both pulp drying machines, built for Paper Machinery by Canada Iron Foundries at Three Rivers, Que., are identical.

Sherbrooke Machineries, Ltd., Montreal and Sherbrooke, Que., is providing the complete bleaching equipment for the Columbia Cellulose mill, including bleach washers and sulfite washers. It is also supplying volume and consistency control for the thin stock before passing to the drying machines.

Estimate of Costs

In the company's prospectuses issued at the time that a $20,000,000 bond issue was being financed it was stated that the cost of delivering logs to the mill site was estimated at $25 per thousand B.M. for coastal timber, $22 to $24 per thousand for the Upper Skeena timber which may eventually be driven down the river as on some eastern waterways. In its cost estimates the company used the $25 figure, or $12.50 per cord.

It was estimated in 1948 that the cost of producing 62,000 tons of air dry high alpha pulp annually would be at the rate of $103 a ton, broken down as follows:

Pulpwood, $30.19; chemicals and water, $18.40½; power and steam, $19.36; maintenance, operating supplies, labor and supervision, $12.23; administration salaries and expenses, $3.06; depreciation, at the rate of $1,250,000 a year, $20.16.

Production of purified cellulose in British Columbia was decided on by Celanese Corp. of America to develop a larger proportion of its required raw materials, and in anticipation of a broadening market for its products at lower prices.

It was the desire to become more independent in its access to such supplies that led in 1945 to building the chemical plant at Bishop, Tex., to supply acetic acid and acetic anhydride for production of cellulose acetate.

The pulp-manufacturing process to be followed at Port Edward was evolved by Celanese engineers and chemists at a 25-ton unbleached sulfite pulp plant at Cumberland, Md., over a long testing period.

Two Important Developments

During the past year two important developments in the textile field were of significance to the company, principal producer of cellulose acetate yarn, and to the textile industry:

In the last half of 1948 the production rate of acetate filament yarn for textiles surpassed that of viscose filament for similar purposes. As a matter of fact, the woven goods textile industries consumed more acetate filament yarn in 1948 than viscose yarn.

The other development of the past year was that for the first time in the history of synthetic yarn the price of cellulose acetate filament yarn was lower than the price of viscose filament yarn. Since then woodpulp was not actually cheaper than cotton linters as a raw material for cellulose acetate, but it has technical advantages and it may ultimately re-establish its price advantage. Woodpulp provides more uniformity than the cotton crops with their variability in quality from season to season.

Shelton Rayonier Mill Back in Production

The Shelton, Wash., division of Rayonier Inc. resumed full seven days a week production of purified cellulose pulp on Oct. 17, bringing into activity all mills of that company again. The Port Angeles division had resumed operations Aug. 8 after both had shut down simultaneously several weeks earlier.

The new hydraulic log barking plant is nearing completion at Shelton but was not ready for the resumption of mill operations.

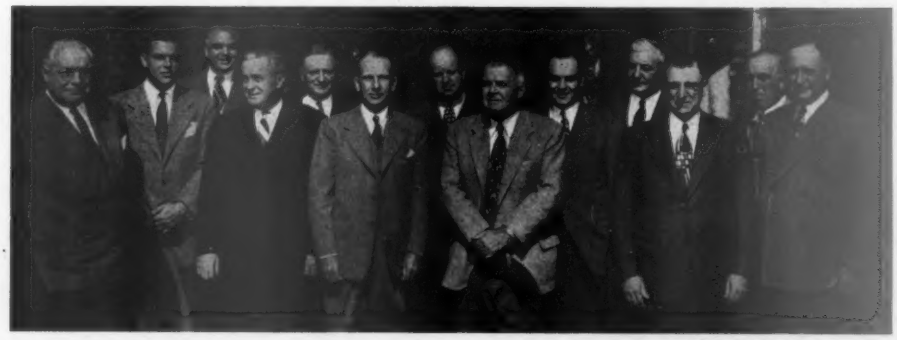
Forest Service Predicts It Will Sell Infested Timber Dec. 1

Ira J. Mason, U. S. Forest Service timber management chief, Washington, D. C., predicts that bids will be called, and will be opened Dec. 1, for sale of Colorado national forest timber for a pulp and paper mill. This involves 5 or 6 million cords of Engelmann's spruce killed by bark beetles, a spreading infestation since a 1939 windstorm.

In our August issue of **PULP & PAPER** we published announced plans of Preston Walker, general manager of a Grand Junction, Colo., newspaper on his efforts to interest a group of Rocky Mountain newspapers in a 185-ton newsprint mill near Glenwood Springs and the formation of Columbine Development Co., as the promotion company. Morris Mitchell, New York City, is the prospective engineer.

T. W. Schomburg, 1856 Colorado Blvd., Denver, representing undisclosed interests, now says he may be a second bidder for the timber. Both plans depend on promotion.

About 20 years ago, Colorado national timber was sold by auction for a mill, but the high bidder later forfeited $15,000 deposit.



DIRECTORS OF SPAULDING PULP & PAPER CO. met at Newberg, Ore., Sept. 19 for the usual Pacific Coast meeting and inspected new equipment, including a new hydraulic barker. Directors and company officials present are shown in the photo by PULP & PAPER (left to right): Stan G. Blankinship, Vice President, Perkins-Goodwin Co., New York; Lou Calder, Jr., Perkins-Goodwin, New York; Ralph Reid, Manager, Timber Division, Spaulding Pulp & Paper Co.; Paul Scallan, Vice Pres. of Spaulding; Arthur V. Miller, Vice Pres., Cornell Wood Products Co.; George K. Ferguson, President, Watervliet Paper Co.; W. Irving Osborne, Jr., President, Cornell Wood Products Co.; W. M. H. Beckwith, Vice Pres. and Mgr., Morris Paper Mills; Reginald L. Vayo, St. Regis Paper Co.; O. M. Allisen, Sec'y.-Treas., Spaulding; J. B. Wilt, Assistant to President in charge of Operations, Spaulding; J. C. Compton, President of Spaulding; and E. C. Hilfert, Vice Pres. and Gen. Mgr. Riverside Paper Corp.

A NEW BOARD MILL

SPRINGFIELD SETS NEW STANDARDS

A modern new 150-ton per day kraft containerboard mill now in operation at Springfield, Ore., in the heart of the greatest concentration of sawmills in the world, marks a further significant step by Weyerhaeuser Timber Co. in achieving a more complete utilization of the vast wood resources of the Pacific Coast.

Although this article deals with the Pulp Division installations and processes at Springfield, to understand what has happened at this little city 120 miles south of Portland, it is necessary to realize that Weyerhaeuser has created here a great integrated wood use center. Just in recent months, a 300,000 board ft.-per-day sawmill and re-manufacturing plant was also completed. The sawmill by-products are raw material for the pulp mill. Here is a new 58-acre artificial log pond and provision is made for addition of a large hydraulic log barker at the sawmill at a later date.

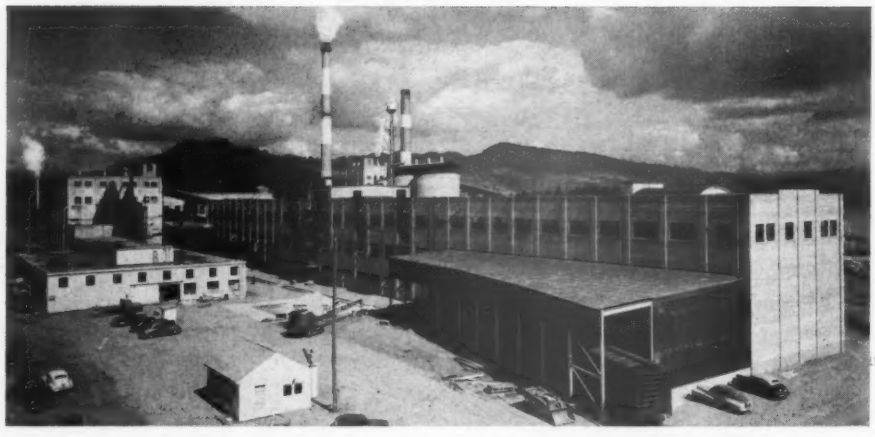
The Springfield wood use center has been built to provide integrated utilization for the timber crops grown on the Calapooya Tree Farms in Lane and Douglas counties of Oregon, and this is in line with the company's policy of integration elsewhere.

As the Springfield development proceeds possibly other products besides lumber and containerboard will be made to further complete the utilization of the wood. This is the first time that one of the company's units has been built where both the pulp mill and the sawmill were constructed at approximately the same time. This has made it possible to plan both with the idea of using each log and piece of wood in the manner and place to which it is best suited.

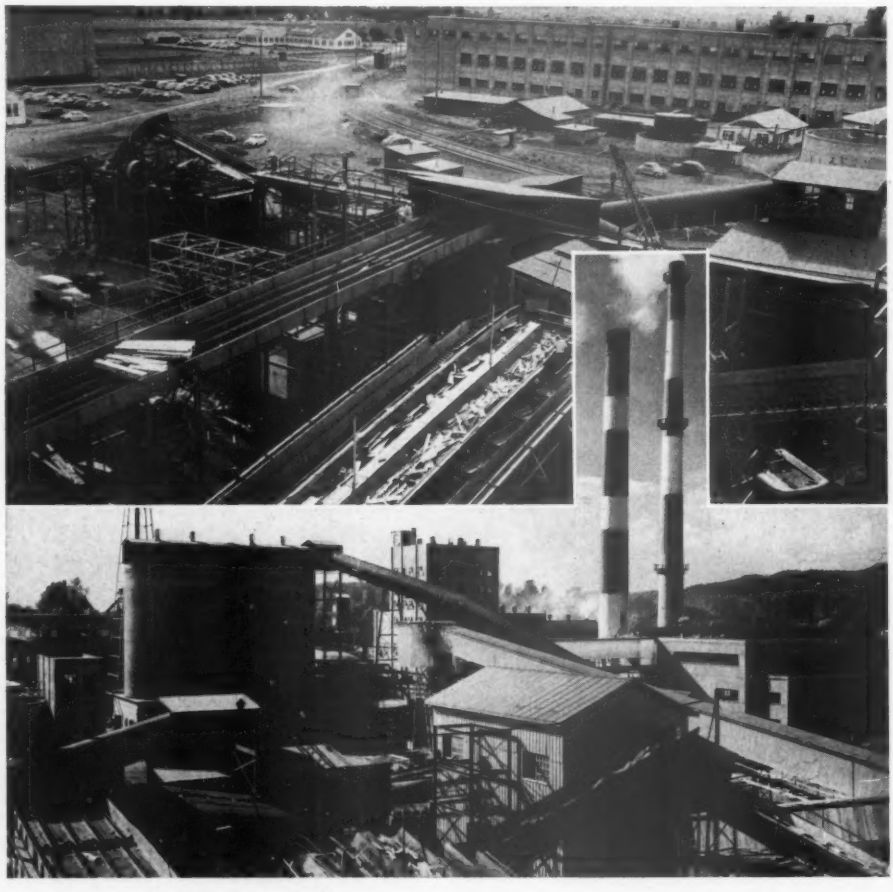
The size of the sawmill was determined by the amount of timber available from the company's holdings in this area on a sustained-yield basis. The size of the containerboard mill in turn was predicated on using the by-product material available from the sawmill operation and logging operation.

Weyerhaeuser last year entered the market kraft pulp industry at Longview, Wash., using a large quantity of sawmill and logging wood left-overs of high quality and free of dirt, which had formerly been unused or burned. Its two sulfite mills are well known, as are its ten sawmills, including a new one at Springfield; also its plywood plant. Another postwar development in utilization is its various plastic bark products and the magnesia base recovery plant in connection with the Longview sulfite mill, which recovers chemicals for re-use and energy for plant operation.

Now at Springfield, Weyerhaeuser has gone a step farther in utilization, not only



FRONT VIEW of new Springfield operations is shown above. Photographs below are from other side of this great, new plant.

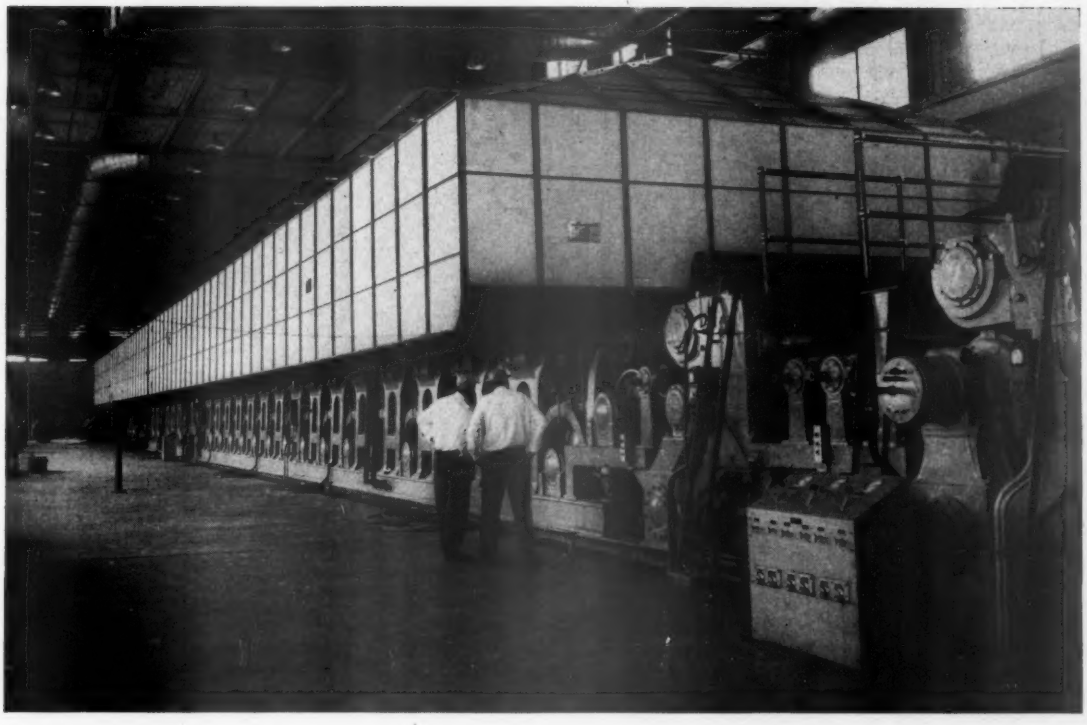


IN MIDDLE VIEW OF WEYERHAEUSER'S NEW OPERATIONS at Springfield: Top of picture shows Central Office at left and Paper Machine Room at right. Laboratory and Infilco Accelator are in extreme right alongside the Machine Room. Fibre Making Processes drum barker and conveyors showing type of sawmill by-products used are in forepart of this view.

Below is another general view. The tall stack is for the Precipitator and other for Central Power Plant. Recovery Building is in center back. The two big chip storage silos are prominent. Small filter building is alongside the bins to left and Machine Room is behind. Conveyors for chips, slabs and hogged fuel are seen.

The New Rice Barton Paper Machine

at Weyerhaeuser's Springfield Mill



This machine for making heavy kraft paper is designed for a maximum paper speed of 1000 f.p.m. It is made up of the following units, arranged in this order: Flow Box and High Pressure Inlet . . . Removable 160′ Fourdrinier of exclusive Rice Barton design . . . First Suction Press . . . Second Suction Press . . . Third Plain Press . . . First Dryer Section . . . Second Dryer Section . . . Breaker Rolls . . . Third Dryer Section . . . Size Press . . . Fourth Dryer Section . . . Two Calender Stacks . . . Uniform Speed Reel . . . Unwinding Stand . . . Slitter and Winder . . . Sectional Electric Drive.

Of special interest are the following: The new Rice Barton duplex breast roll arrangement which eliminates sag in the wire between the breast roll and the first table roll . . . Rubber mounted table roll bearings . . . Hydraulic mechanism on all presses . . . Totally enclosed dryer gears . . . Antifriction dryer bearings.

RICE BARTON CORPORATION

WORCESTER, MASSACHUSETTS

RAY SMYTHE, *West Coast Representative, 501 Park Building, Portland 5, Oregon*

making a kraft pulp but installing a versa-the Rice-Barton board machine whose containerboard has already been sold. The high quality left-over slabs and trim of the new Weyerhaeuser sawmill on the same site; small logs from Weyerhaeuser's 155,000-acre Calapooya Tree Farm by pre-logging and re-logging before or after large logs are taken out, with light equipment; farmer logs and also trims, edgings and slabs from other sawmills in Lane county feed this new pulp and paper mill. In Lane county, there is said to be 100 sawmills and most of this quality wood is Douglas fir, which until recent years and the refinement of pulp processes had no important value in the pulp and paper industry.

Provision is made for converting to chips the following types of wood: (1) Clean waste wood from the sawmill; (2) slabs handled through a hydraulic slab barker; (3) cordwood handled through a drum barker; (4) prelogged wood in tree lengths also handled through the drum barker; (5) large-diameter logs handled through the sawmill where they will be cut down to the size that can be handled in the 24-inch mouth chipper; and (6) outside waste wood from other mills brought in and combined with that of the Springfield sawmill.

Chip storage bins consist of two concrete silos with rotary feeders on the bottom. Liquor making, lime recovery, liquor recovery and the oocking operation are designed on standard principles.

NEW ENGINEERING FEATURES

Before setting out on a flow description of the new mill, we will first single out several unusual or new engineering features or innovations. There are at least four or five major departures from standard engineering practice or mill process. Briefly these are as follows:

HOWARD W. MORGAN, Manager of the Pulp Division, Weyehaeuser Timber Co., Tacoma, Wash., which built new pulp and containerboard plants at Springfield, Ore.

OTTO C. SCHOENWERK, veteran mill builder and engineer who has added another successful mill to his long line of industry "monuments" in the board mill and container plant at Springfield.

RESPONSIBLE AT SPRINGFIELD for operations and departments are l. to r.): MARVIN JONES, Mill Manager; A. P. SIEBERS, Paper Mill Supt.; HUGO TRYGG, Pulp Mill Supt.; WILLIAM PITTAM, Plant Engineer; and H. B. REILLY, Technical Director.

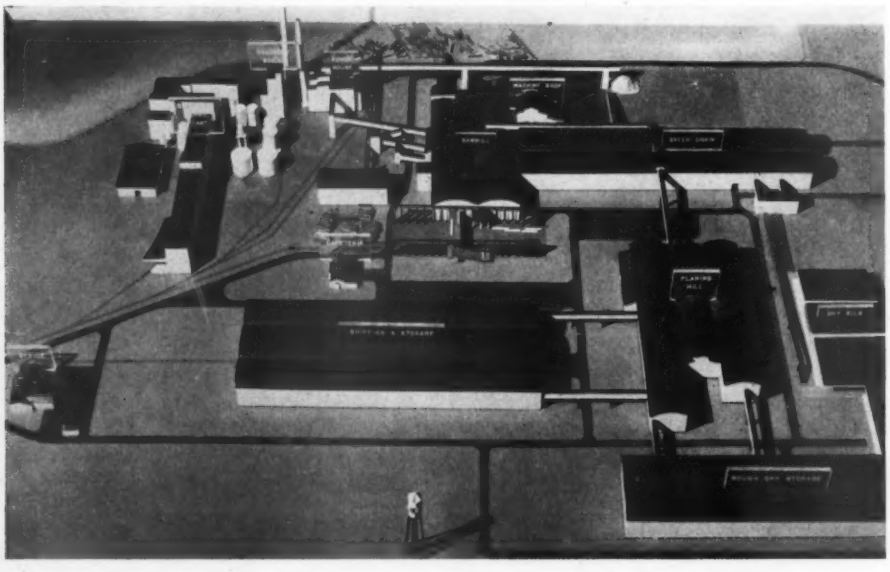
Bergstrom Tower Installation

Contaminated condensate from the relief steam, blow steam, and black liquor evaporators is not discharged into the sewer until it is virtually free of objectionable substance.

To do this, a Bergstrom Tower is used, Weyerhaeuser having purchased the license to operate one from the Fibre Making Processes, Inc., of Chicago, Ill. This tower removes a large majority of harmful compounds such as hydrogen sulfide an dother sulfur compounds.

Approximately 25,000 cu. ft./minute of stack gases are blown into the tower countercurrent to 250 gallons per minute of condensate. The tower is of wood stave construction, 28 feet high and 10 feet in diameter. It is packed with 30,000 four-inch diameter by four-inch long cross-partitioned rings furnished by U. S. Stoneware Co. The gas from the tower is returned to the stack breeching. The water from the tower flows to the sewer, substantially free of all contaminants.

HERE'S MODEL REPRODUCTION OF WEYERHAEUSER'S NEW INTEGRATED WOOD USE CENTER at Springfield, Ore. At lower left is the Central Office. Long buildings in foreground are for shipping and storage. The Pulp Plant and Board Mill are at upper left with Recovery Plant and Central Power Plant next on the right. Log Pond is at top of the picture and tiny logs can be seen. The Machine Shop is at top center. Other buildings as marked on right side are Saw Mill, Green Chain, Planing Mill and Dry Kiln. A Cafeteria is near the center.



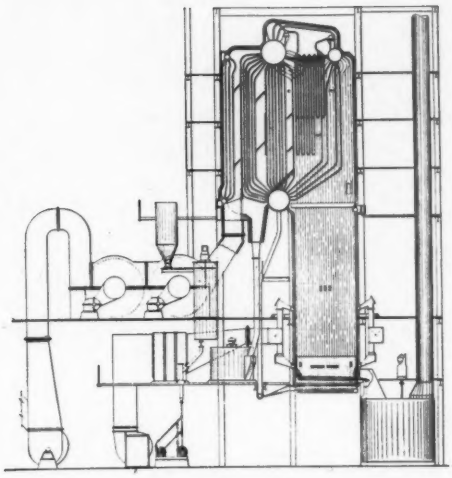
Blow Steam Separation Tank

To insure against black liquor and fiber getting into the blow steam accumulator and subsequently into the sewer, there is a centrifugal separating tank between the accumulator condenser and blow tank. After every blow the trapped fiber is washed down with black liquor into a foot box from where it is pumped into the blow tank.

An additional feature of this foot box is that all floor drains in the wash building connect into it. All spills, foam, wash-up water, or other sources of black liquor and stock in the wash building are thus prevented from entering the sewer.

Innovation in Washing

An innovation in pulp washing is used. The washing consists of three stages of Impco vacuum washers followed by rotary screening through Trimbey screens which are in turn followed by a fourth



New Weyerhaeuser Mill uses C-E Recovery Unit

Firing level showing black liquor spray burners

The new Weyerhaeuser Mill at Springfield, Oregon is another important step toward the more complete utilization of the Pacific Coast timber crop. This mill uses the many cords per acre of good clean material recovered by the pre-logging and re-logging of Weyerhaeuser's 155,000-acre Calapooya Tree Farm. Additional raw material for this modern 150-ton per day kraft container board mill is provided by trims, edgings and slabs from the many sawmills in the area.

Chemical recovery for this notable new mill is accomplished by a C-E Recovery Unit. This unit, illustrated above, is designed to burn 464,000 pounds of black liquor solids per 24 hours and will produce steam at 570 psi and 675 F.

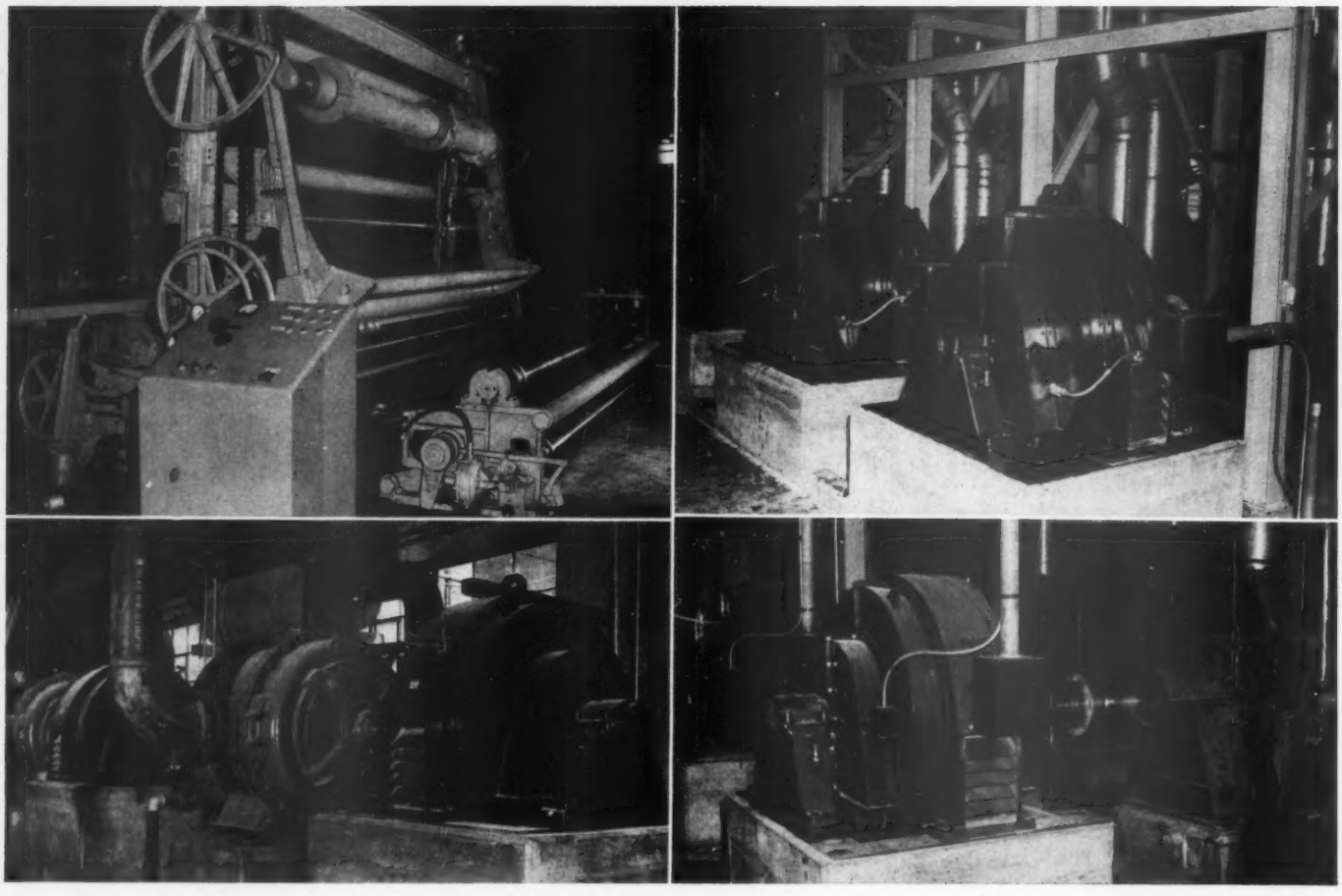
The reliability, economy and operating efficiency of the C-E Recovery Unit are well known. And, as you would expect, more and more mills have selected C-E for both new installations and expansion of existing ones. B-353

COMBUSTION ENGINEERING—SUPERHEATER, INC.

A Merger of Combustion Engineering Company, Inc. and The Superheater Company

200 Madison Avenue • New York 16, N. Y.

PRODUCTS FOR THE PAPER INDUSTRY INCLUDE RECOVERY UNITS, STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; ALSO PRESSURE VESSELS



CONTAINERBOARD PLANT EQUIPMENT at Weyerhaeuser's new Springfield mill: Top left: A Cameron No. 19 Model Rewinder after the paper machine showing Westinghouse 75 hp. adjustable speed drive and ammeter and controls.

Top right: Three E. D. Jones & Sons Majestic Jordans driven by 400 hp. Westinghouse synchronous motors of 400 rpm. These jordans have new plug pressure recorders which give continuous record of pressure between refining elements. Note stainless steel piping.

Lower left: Nash Engineering's couch vacuum pumps driven by synchronous motors.

Lower right: Shartle Bros. Hydrafiners driven by 350 hp. synchronous Westinghouse motors.

stage of washing. The wash water added on the fourth stage flows countercurrent through the screening operation and through the first three stages of washing. In this way unusually high chemical and liquor recovery is otbained. This step, plus the use of a Sveen Pederson save-all for complete fiber recovery on white water, results in the effluent going to the river being free of any harmful concentrations of chemicals or fiber.

Dry Handling of Cottrell Ash

At Springfield the ash subtracted from the recovery plant stack gases in the Cottrell are conveyed in the dry state to the salt cake mixing tank.

Usually, the ash is made into a slurry at the Cottrell and pumped to the mixing tank. But here the ash is conveyed from Cottrell to an elevator with a screw conveyor. From the elevator it is carried by another screw conveyor to a point beyond where makeup salt cake is measured into the system. From this point both streams of salt cake proceed to the mixing tank by means of a third screw conveyor. All conveyors and elevators were designed and furnished by Link-Belt Co.

By using this type of handling system, a low-cost, trouble-free installation has been secured.

Conservation of BTU's in Raw Water

Another interesting novelty is conservation of BTU's in raw water pumped from McKenzie slough, a diversion of part of the flow in the river. The temperature of this water varies from a few degrees above freezing in the winter to 56° F. in the summer. Weyerhaeuser has taken advantage of waste heat in the process to warm the water before treatment and clarification and subsequent use.

Fifteen hundred gallons per minute of raw water is pumped through a surface condenser where the vapor from the last effect of the quintuple-effect evaporator is condensed. This has two results, one of which is to reduce the quantity of water wasted at this point if the conventional barometric condenser were to be used. The second result is to raise the temperature of the cooling water to approximately 120° F. or the conservation of 800,000 BTU / min. From the condenser the warmed water goes directly to the Infilco Accelator.

The difference between the 1500 g.p.m. and total raw water requirements is about 4000 g.p.m. which amount is drawn from the turbine condenser cooling water at the power plant. This temperature varies with the electric and extracted steam load but is in the neighborhood of 10° F. rise. The heat realized in this manner is approximately 300,000 BTU's per minute, or a total saving approximating 1,000,000 BTU'S per minute. This is a low quality heat, it is true, but later in the process it eliminates the necessity for using process steam to warm the process water.

Incidentally, all drinking water throughout the plant is dispensed through electrically refrigerated drinking fountains.

Instrumentation

Up to the minute, in every other detail of its layout, equipment, and operational planning, the Springfield mill makes full use, also, of the most modern developments in process instrumentation. Foxboro instruments for measurement and control are noticeable throughout the plant, with numerous attractive steel cabinet uints for centralized recording and control of such operations as digesting, pulp washing, evaporating, and the recovery room, recausticizing and screen room.

Of special interest, because it is a relatively new application of instrument engineering, is the continuous density control system for the recovery furnace dissolving tank. Here a Foxboro Model 40 liquid density controller, with a Foxboro

ALL OVER THE MILL

You'll Find

PACIFIC-WESTERN

The new Weyerhaeuser mill at Springfield, Oregon, marks the latest step in this progressive lumber and pulp producer's continuing effort to achieve maximum use of forest resources. Because of Pacific-Western's more than fifty years of sound gearmaking experience it was not surprising that Weyerhaeuser specified Pacific-Western for power transmission drive requirements.

Hundreds of Pacific-Western speed reducers and special drive units are in service throughout the mill. The illustrations show only a few of these dependable Pacific-Western units in the new plant driving pulp and lumber machinery, with chain guards removed for photographic purposes.

For large mills or for smaller operations, skilled Pacific-Western application engineers are always ready to study your power transmission problems. We are prepared to quote you promptly on your needs. Specify Pacific-Western and be sure.

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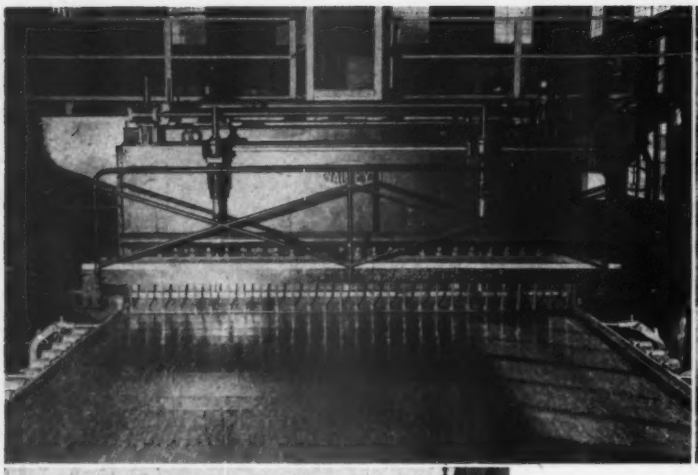
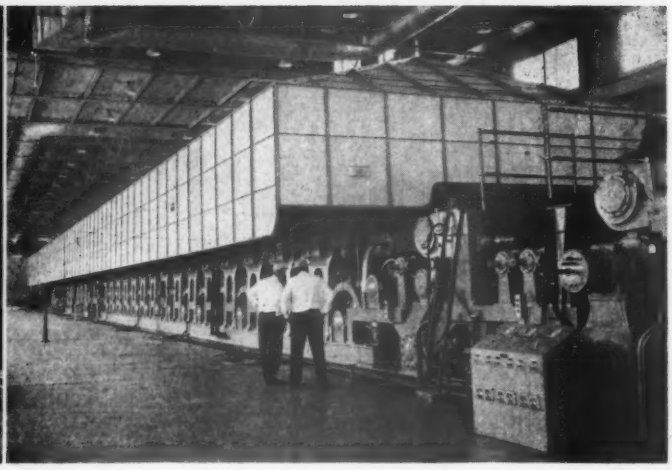
4952

GEAR PRODUCTS





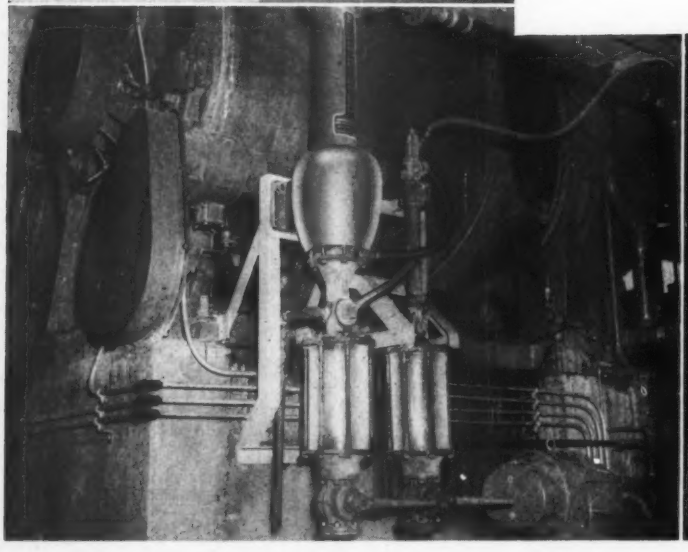
SPRINGFIELD MACHINE ROOM VIEWS: Top left: Valley Iron Works headbox-inlet equipment on Rice Barton Fourdrinier machine;

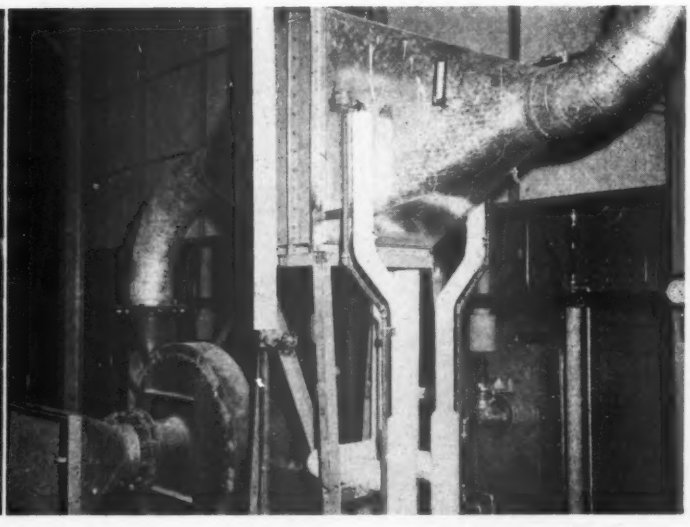
Top right: Dryer section of Rice Barton machine with Drew Engineering ventilation and hood;

Middle left: One of most interesting of some 300 Pacific Western Gear Works installations—a triple reduction reducer on stock chest of 25 hp., 1200 rpm., 158:1 ratio; with Westinghouse motor.

Lower left: One of four Bird screens with oscillating showers. Primary and auxiliary Bird Dirtecs in foreground.

Lower right: Drew Engineering hi-jet apparatus for nozzles which blow vapors from machine pockets to Deco hood exhausts.





liquid level controller, maintains a constant Baume value in the raw green liquor produced, a control step which adds much to the over-all efficiency of the recausticizing room.

Stainless Steel

The extensive use made of stainless steel throughout this plant is another unusual feature but indicative of a trend that has become quite widespread in the pulp mills of the Far West. Electric Steel Foundry of Portland supplied considerable stainless castings, as well as a number of heat exchangers. Stainless steel piping is used almost exclusively throughout this plant. There were two important suppliers of piping, flanges and fittings—the Northwest Copper Works Inc. of Portland and Alaska Copper Works of Seattle. Stainless steel types 304, 302, 316 and others were used. The latter also supplied heat exchangers and their pressed ring-neck Van-Stone joints for piping was noted. If Springfield is typical, the age of stainless steel is here in the pulp industry.

Flow Description

Here follows a brief outline of the major units in the new Springfield mill, with detailed description of phases of the

Filtration After Treatment Not Required!

NEW ACCELATOR INSTALLATION AT WEYERHAEUSER TIMBER CO., SPRINGFIELD, OREGON

Peak Turbidities Handled by ACCELATOR® at Weyerhaeuser's Springfield, Oregon Mill

NORMALLY, the McKenzie River turbidity is low enough that Weyerhaeuser's Springfield, Oregon, pulp mill can produce a satisfactory product without water treatment other than sedimentation.

Anticipating the seasonal flash floods which cause high and fluctuating turbidities that would upset their production, Weyerhaeuser has installed a 56' diameter Accelator which can chemically treat and clarify 5,000 gallons of water per minute. Using alum and activated silica, treatment is so complete that further filtration is not necessary.

The Accelator permits Weyerhaeuser to produce pulp whether the turbidity of the water supply is low or high. Space required for this production insurance is small and additional filtration equipment is not required.

TYPICAL INSTALLATIONS..

	gpm
• Weyerhaeuser Timber Co.—Longview, Washington	15,200
• Brunswick Pulp & Paper Co.—Brunswick, Georgia	14,000
• International Paper Co.—Livermore Falls, Maine	11,200
• International Paper Co.—Panama City, Florida	2,000
• International Paper Co.—Georgetown, South Carolina	900
• Scott Paper Co.—Chester, Pennsylvania	8,400
• North Carolina Pulp Co.—Plymouth, North Carolina	8,400
• St. Joe Paper Co.—Port St. Joe, Florida	7,000
• Consolidated Water Power & Paper Co.—Wisconsin Rapids, Wisconsin	7,000
• National Container Corp.—Jacksonville, Florida	3,500
• Northwest Paper Co.—Cloquet, Minnesota	3,500
• Northwest Paper Co.—Cloquet, Minnesota	2,100
• Ontonagon Fibre Co.—Ontonagon, Michigan	3,500
• Container Corp.—Pencoyd, Pennsylvania	3,000
• St. Regis Paper Co.—Deferiet, New York	500

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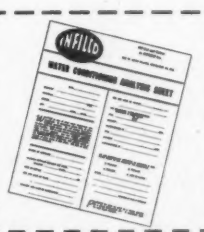
Make sure your water meets the exacting specifications you require. Send for our Water Analysis Sheet, then fill in and return it with a sample. You will receive our laboratory analysis and report promptly. A valuable INFILCO CHEMICAL CALCULATOR slide rule sent FREE to all who return our analysis sheet properly completed. *No cost or obligation is involved for this laboratory service.*



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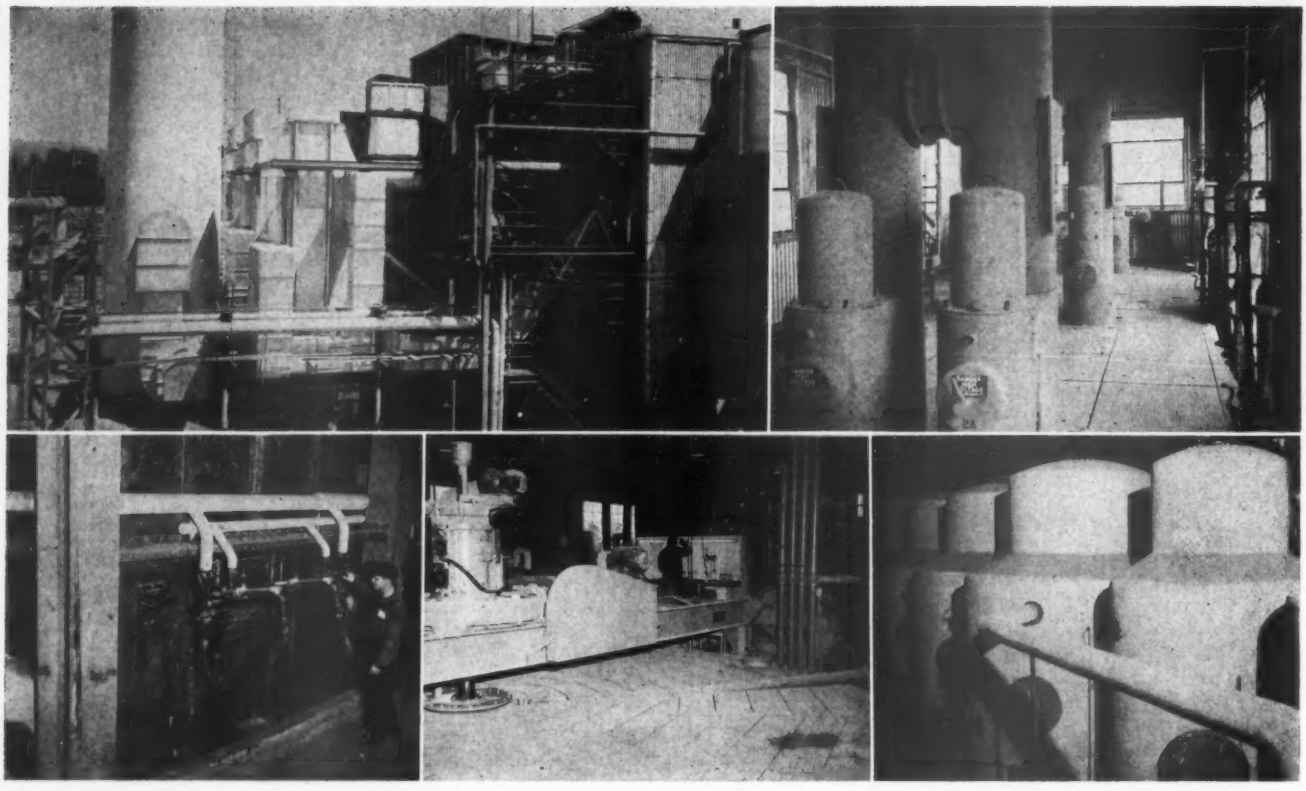

VIEW OF CENTRAL POWER PLANT for Weyerhaeuser mills at Springfield at upper left. This is end view of three Babcock & Wilcox boilers at right, dust collectors in center and draft fan and stack for burned gases at left.

Picture at top right shows control floor for Western Precipitation Corp.'s Cottrell unit for precipitating salt cake from recovery furnace gases.

In lower row, l. to r., are: Black liquor being burned in Combustion Engineering-Superheater Inc. unit; Dorrco tray thickener with motorized lifting device used for white liquor clarification; and Hydraulic Supply Co. evaporators designed by James Rubush, chemical engineer, Wenatchee, Wash. Industrial insulation done by E. J. Bartells Co. is shown in this and other views.

operations contributed by authoritative sources.

Mill construction started spring of 1948 with laying of footings by W. J. Park & Sons of Yakima, Wash. All concrete buildings are constructed by slip forms, a modern technique of building construction.

Wood is chipped with three Carthage chippers—two 64-in. for sawmill wood and a 96-in. for 4-ft. logs and bark cants. A Sumner Iron Works hydraulic barker removes bark from sawmill slabs and a Fibre Making Processes, Inc. M-bar barking drum debarks 4-ft. logs. The drive on the hydraulic barker and many speed reducers throughout the wood operations were made by Western Gear Works of Seattle.

Oversize chips rejected by Allis-Chalmers low-head vibrating screens are rechipped by 32-in. Carthage rechipper. Sawdust and fines go to the lumber division power plant.

Chips are taken by American Rubber Mfg. Co. belt conveyor, furnished by Link-Belt Co., to chip storage where each digester charge is discharged by Link-Belt feeder to 36-in. belt conveying chips to digester. Link-Belt furnished a great deal of conveying equipment, traveling water screens and hogged fuel conveyor. Blaw-Knox constructed the three 3250 cu. ft. digesters.

When in full production a digester is discharged every hour. Cooking is by the indirect process, the cooking liquor heated by a Fibre Making Processes Inc. heater by steam and circulated through the digester by an F.M.P. spring-mounted pump.

Pulp is blown to blow tank and from there pumped to wash room.

In the process of blowing, the steam is condensed at top of the accumulate. Overflow is contaminated condensate which is piped to the Bergstrom tower.

All the developments of modern science in the elimination of possible river pollution have been incorporated into this operation. Mill floor drains operate in a closed system as described. An unusual feature in this kraft mill is that the liquor room, digester, washing and blow room are all under a single roof. Bulkley-Dunton Pulp Co. supplied fiber savealls.

Stock entering the wash room goes to Bird Johnson knotters where unexploded chips, knots and bark particles are removed and returned to digesters for further cooking.

Chemical Processes

An Impco brown stock three-stage countercurrent washing system removes the black liquor from the pulp with a minimum of dilution before the stock enters the stock chests.

The black liquor removed from the pulp by each washer is collected in a tank under each washer and provides the dilution necessary for each stage to permit formation and is also used for washing the pulp on the preceding washer until the excess reaches the primary tank, from where it is pumped to an outside storage tank. This is an entirely closed system as we have pointed out. The entrained air in the black liquor is removed by means of an Impco foam breaker, which returns the black liquor to the system.

From the outside storage tanks the black liquor is pumped to vacuum evaporators which are of the long-tube vertical film type and are supported from the grade elevation. This is a six-body quintuple effect unit provided with a surface condenser. It has been liberally supplied with heating surface to take care of the extra dilution from floor drains which ultimately reach the evaporator. Addition of the excess water to the exaporator feed results in average weak liquor of about 13% total solids and it is concentrated to 55 total solids and stored in a strong black liquor tank in the recovery building. This evaporator was designed by James P. Rubush, chemical engineer of Wenatchee, Wash., and built by Hydraulic Supply Mfg. Co. of Seattle.

The liquor is pumped from the storage tank to D. J. Murray cascade evaporators where it is further concentrated to approximately 65 total solids or proper concentration for burning in the Combustion Engineering-Superheater Inc. recovery furnace. The product of combus-

FORMATION
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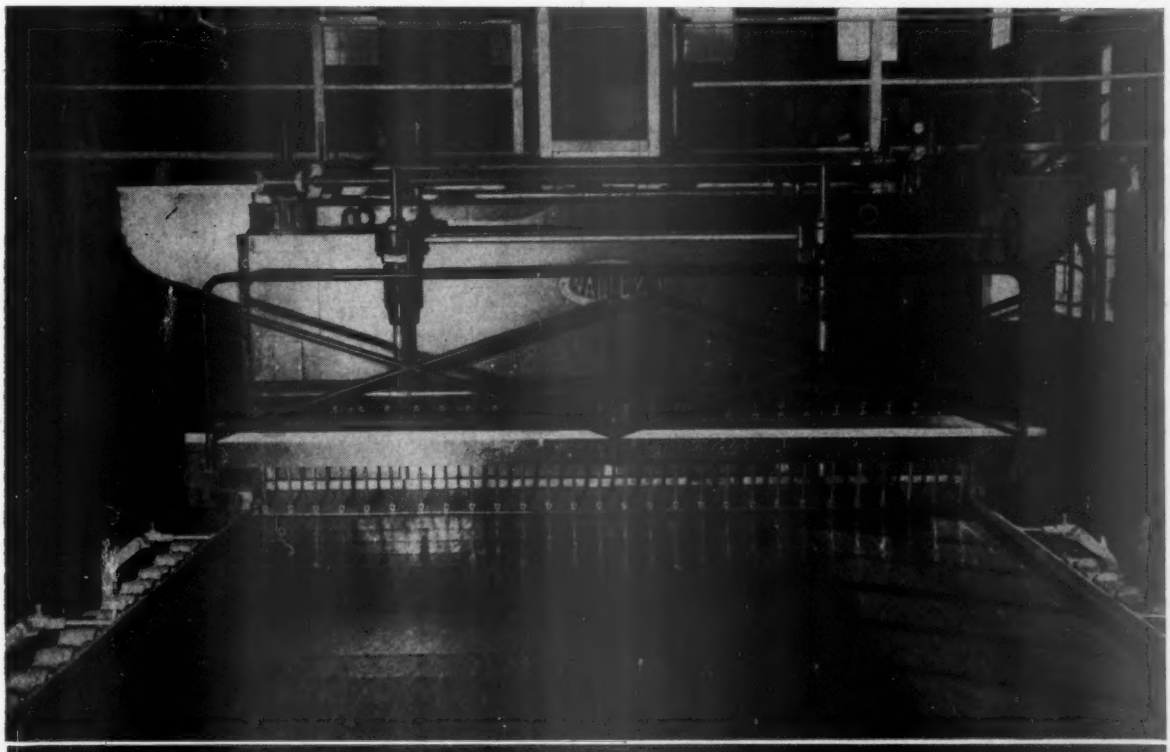
LEVEL SHEET
INCREASED SPEED
HIGHER TEST

AT WEYERHAEUSER'S NEW SPRINGFIELD MILL . . .

Serving Rice Barton's new papermachine---a Valley inlet. Inside: smooth, gleaming, stainless. Outside: glassy, glossy Lithcote, baked-on in 6 coats for permanent rust prevention.

VALLEY IRON WORKS COMPANY • Appleton, Wisconsin



On more and more paper machines it's INLET and HEADBOX by . . . **VALLEY**

tion is a sodium sulfide combined with other sodium salts which, in the form of a malten slag, drops into a dissolving tank.

In the combustion process the escaping gases pass through a Cascade Evaporator and then through Western Precipitation Corp. Cottrell precipitator where electrically charged rods collect the suspended salt cake. This in turn is returned to the salt cake mixing tank in the boiler house.

E. J. Bartells Co. has done an extensive job of installing industrial insulation in the recovery plant, the central power plant and for outdoor distribution lines, applying Johns-Manmille insulation.

The ashes of combustion are trapped in a chemical ash tank and mixed with weak wash and pumped to the salt cake mixing tank, this resultant solution then going to the furnace.

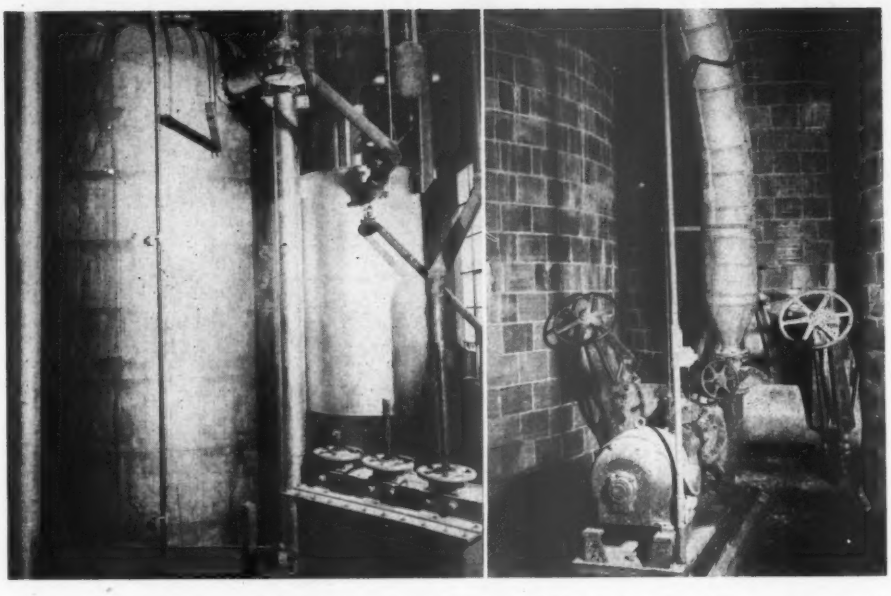
Molten slag in the dissolving tank mixes with weak wash to form raw green liquor which is pumped to the liquor room where it is clarified in a Dorrco tray thickener. Clarified green liquor goes to outside storage. Sludge from the green clarifier is sent to the dregs washer, another Dorrco tray thickener. The remaining dregs are passed out of the system and the wash water goes to the weak wash storage tank from which it is subsequently pumped to the recovery boiler disolving tank.

The clarified green liquor is heated and mixed with new and burned lime in a Dorrco lime slaker to form milk of lime before going to the Dorrco causticizers which carry the chemical reaction to raw white liquor stage.

This raw white liquor passes from causticizer to white-liquor clarifier which is a Dorrco tray thickener. Clarified white liquor is pumped to outside storage tanks for use in subsequent digester cooking.

Because of its extreme causticity the white liquor must be diluted with black liquor in the digester to make up the required liquid volume.

Lime mud product of the white liquor clarifier is sent to another Dorrco tray thickener where the mud is washed. The resultant mud passes over an Oliver Lime Mud Filter for another washing and de-watering. This mud then goes to a lime kiln where it is burned to lime rock for slaking with green liquor in the Dorrco lime slaker. Weak wash from the Oliver Lime Mud Filter is sent to the weak wash tank.



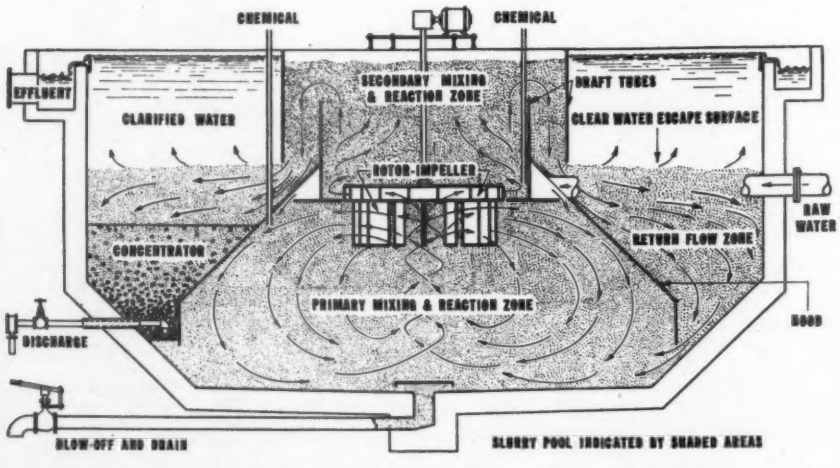
LEFT, one of three 3250 cu. ft. Blaw-Knox Co. digesters at Springfield, showing turpentine decanter at right. RIGHT, three of 10 Kalamazoo Tank & Silo Co. tile stock tanks. Each have 19,000-gallon capacity, holding 9500 lbs. air dry pulp at 6% consistency. Warren Pump Co. stock pump powered with 30 HP Westinghouse motor is in foreground. Shartle Bros. supplied 22-in. slide-gate valves, and stainless steel piping is by Northwest Copper Works.

Water Treatment

Infilco Incorporated has supplied a modern water treatment system. An accelator clarifies the water so that filtration is not required, in fact, filters are entirely omitted from the mill water system; Accelator unit is 56'-0" in diameter; the water treating system has the inherent Accelator advantages of small space requirements in relation to throughput rate, and low operating costs.

The Accelator could also be used for chemical treatment but at Springfield it is not necessary because of the quality of water available for unbleached board.

It would be used in chemically treating the water also in event of flooding of the McKenzie River.



HERE IS CROSS SECTION OF THE INFILCO INC. ACCELATOR installed at Weyerhaeuser's Springfield mill. Some interesting facts concerning water handling and treatment are related in this article.

Paper Machine Room

The machine room is of concrete construction — a building 60x560 feet. The basement has a 14-ft. ceiling while the machine room proper has a 24-ft. ceiling. A modern ventilating system was designed and installed by Drew engineering of Portland, Ore.

The stock storage consists of three large stock chests constructed of tile, and three tile constructed chests for blending the various cooks of pulp before being pumped to the refiner supply chest, also of tile construction. From the refiner supply chest the stock is pumped on through two Shartle No. 6 Hydrafiners on through a DeZurik stock regulator and into two tile constructed machine chests.

Stock is then pumped up to the jordan head box which supplies stock to three E. D. Jones & Sons Majestic Jordans. A new feature here are the plug pressure recorders on the Jordans which give a continuous record of the pressure between the refining elements during the operation.

The stock is metered with stock metering gates to Jordan intake, flows on through Jordans into a Jordan discharge headbox and direct into a large white water line that feeds the 10,000 g.p.m. fan pump. The Warren fan pump discharges into a flow box that feeds four large size Bird screens, and from Bird screen discharge flume, direct to machine headbox controlled across the box inlet with six streamlined valves.

Warren custom-built pumps are used

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AT SPRINGFIELD

Evaporators (on right)

Digester Operating Floor (below)

View in Evaporator Room at New Springfield Mill Showing Completed Insulation

Showing Completed Insulation

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extensively for stock and liquor. Western Gear Works supplied various stock agitator drives.

From the Bird screens the stock passes through a Valley Iron Works headbox and Voith high pressure inlet onto the Fourdrinier wire of the Rice Barton machine. The Fourdrinier has a 164-in. by 103-ft. wire. There is a Beloit suction couch roll with standard drilling and double breast roll. The Valley Iron Works headbox and inlet equipment are characterized by adjustable solid stainless steel nozzle and apron, all stainless steel interior, all exterior fully Lithcoted with six coats baked-on.

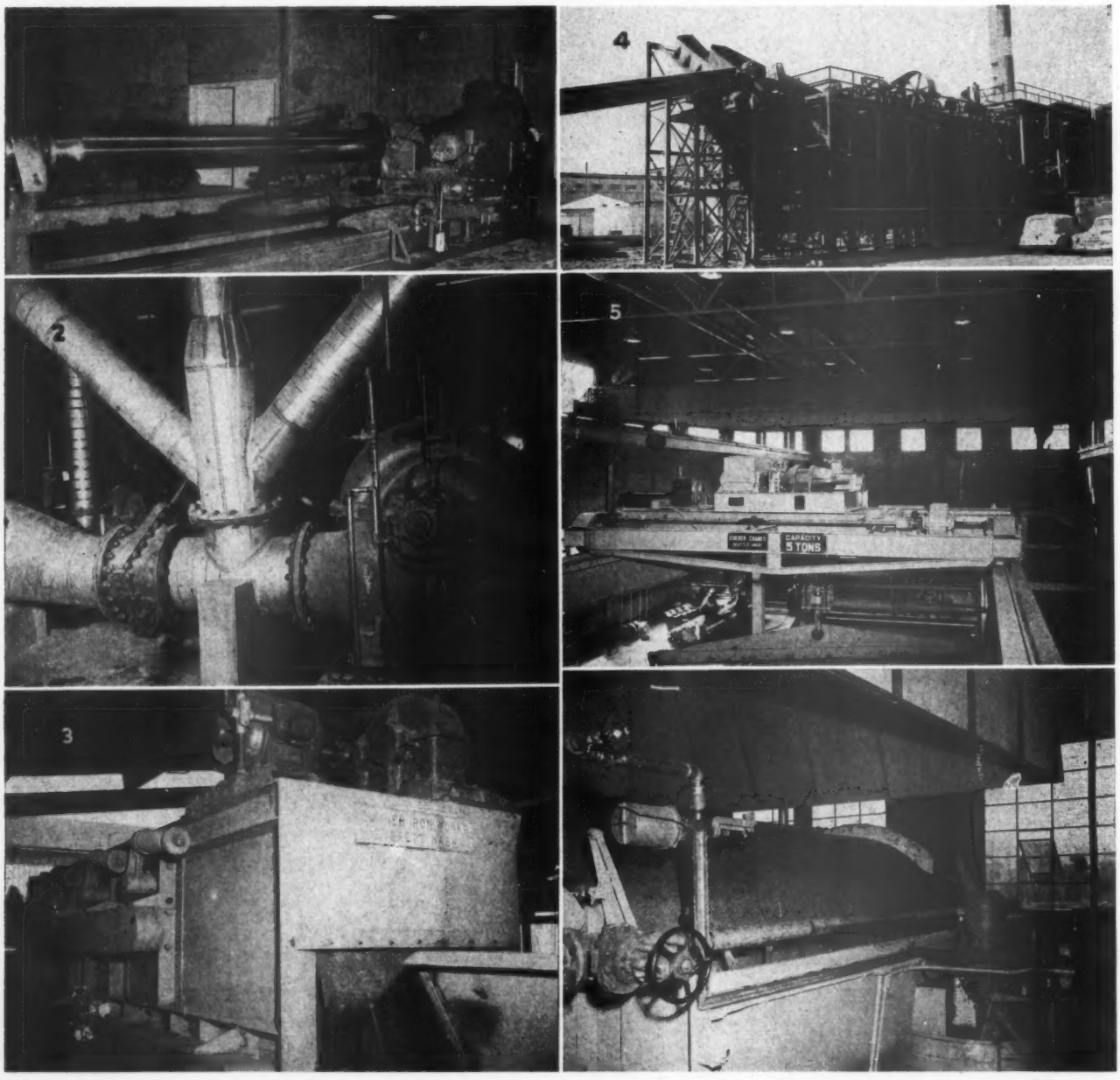
The machine is equipped with a first and second Beloit suction press and a third plain press all of conventional design. There are five dryer sections. The first has thirty 5-ft. paper dryers. Then comes a smoothing press of conventional design, and breaker rolls, then 16 5-ft. dryers, then a size press. Here surface size consistency of steam cooked starch is applied. There follows the fourth dryer section of 10 more 5-ft. dryers. The machine is equipped with 8 felt dryers; then comes a heavy-duty calender stack, then two 5-ft. dryers, then a second heavy-duty calender stack, and a modern Beloit reel which is equipped with Lodding doctor. A Cameron winder machine and slitter follows. The machine and winder are driven by Westinghouse electronic sectional drives of modern design.

A Lobdell No. 5 GHV Roll Grinder keeps all the machine rolls ground for maximum efficiency. Sub-machine equipment includes Nash vacuum pumps and Midwest-Fulton drainage.

A Gardner-Denver 13½ x 8 x 8, 100-lb. pressure air compressor, powered by 100 HP G.E. synchronous motor, furnishes industrial air throughout the board mill.

Electrical power installations were layed out and installed in the Pulp Division by Western Electrical Construction Co. of Portland. This involved an aerial self-supporting cable system for main

IMPORTANT EQUIPMENT AT SPRINGFIELD includes: 1—Lobdell roll grinder refacing a calender roll. 2—Main and auxiliary fan pumps by Warren Pump Co. draw white water from wire pit and mixes it with stock from jordans and discharges to Bird screens. Stainless steel piping was fabricated and supplied by Northwest Copper Works and installed by Bumstead-Woolford of Seattle. Western Machinery Corp. built guillotine stock valves, one on either side are stainless steel cast by ESCO. 3—Sumner Iron Works hydraulic barker cleans bark from sawmill slabs. 4—Fibre Making Processes, Inc. barking drum for processing 4-ft. lengths for delivery to drum barker. 5—Two Ederer Engineering Co. bridge cranes in the machine room. Five-ton unit in foreground handles paper rolls between Beloit reel and Cameron winder. Ten-ton unit at top is primarily for handling 7.8-ton dryer rolls, also facilitates moving other heavy equipment and travels full length of machine room. 6—No. 4 Impco vacuum filter and repulper, with DeZurik consistency regulator at right. Another DeZurik regulator is used in machine room on operating floor ahead of jordans. Deco hood and exhaust system are above filters.



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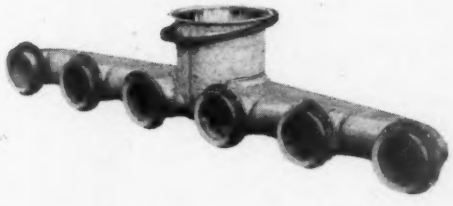

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power distribution carrying a three-phase 60-cycle current at 12,000 volts. This is stepped down at four points by outdoor type structural steel substations reducing voltage to 2200 volts and 440 volts for power; and, 110/220 volts for lighting. These are arranged so any single transformer can be taken out of service without interfering with operations. Motor controls are set up in banks at various points with push-button controls.

Lighting in the machine room uses high-bay Holophane units; and, over the wet end on the machine, mercury vapor lights are installed.

Central Power Station

The Springfield central power station at Springfield is laid out to take all possible advantage of outdoor construction. Provision for earthquake shock is in the design of all structures. Boilers, dust collectors, air pre-heaters, breechings and forced and induced draft fans are installed completely out-of-doors as well as water-treating system, tanks, filters, de-aerating heaters and motor-driven fire pumps.

Three Babcock & Wilcox boilers operating at 600 pounds pressure with rated capacity of evaporating 85,000 pounds of water each per hour are the steam generation units. However, high-pressure steam will be obtained from the pulp mill recovery plant and be delivered to the lumber division, under which jurisdiction the power plant operates, and the pulp division will in turn receive back electric power and low-pressure steam from the lumber division for operation of the pulp and container board mill.

Fuel arrives at the power plant on rubber-belt conveyor from various points in the lumber manufacturing processes and a chain flight conveyor in the power plant takes over the fuel as it reaches the boiler room. The chain transports the fuel over ports from which chutes lead to the point at which the fuel is fed into the combustion chambers. Automatic firing is carried out by controls operating through photo-electric cells, with impulses transmitted to Louis Allis motor unit driving Link-Belt screw conveyor fuel-feeding unit through Western Gear Works reduction gears.

Although hog fuel, and other wood by-products from lumber manufacturing processes will be the basic fuel, emergency provisions have been considered in building the plant. One of the three B&W boilers is designed to burn oil as well as the sawmill plant's by-products.

The electric generating plant consists of Westinghouse equipment. Major units are two turbo-generators, one of 9375 K.V.A. and the other 6250 K.V.A., and the main distribution panel containing air circuit breaker metal enclosed switch gear for distributing power through-out the entire operations.

THE ELECTRICAL STORY

By A. F. Weleber, Chief Electrician, Weyerhaeuser Timber Co., Springfield, Ore.

And J. A. Tudor, Consulting and Application Engineer, Westinghouse Electric Corp., Portland, Ore.

Power is generated by two Westinghouse turbo-generators. One is a 9375 KVA, 11,500 volt, 80% P.F., 3600 RPM generator; the other is a 6250 KVA, 11,500 volt, 80% P.F., 3600 RPM generator. The 6250 KVA turbine supplies 150 lb. extraction steam for the digester processes, while the 9375 KVA generator supplies 40 lb. extraction steam for paper machine dryers and other low pressure steam requirements.

The generators are connected to a 12,000 volt bus through metal-clad switchgear. The breakers are Westinghouse air-break, Type DH, totally enclosed, with the draw-out feature. Similar breakers are used to connect the 12 KV bus to plant feeders and also to the power company, who purchase several thousand KW from the company.

The power plant auxiliaries are supplied from a pair of 12,000 to 440 volt, 1000 KVA, Type ASL, air-cooled transformers, which are mounted in a metal-clad structure with air circuit breakers.

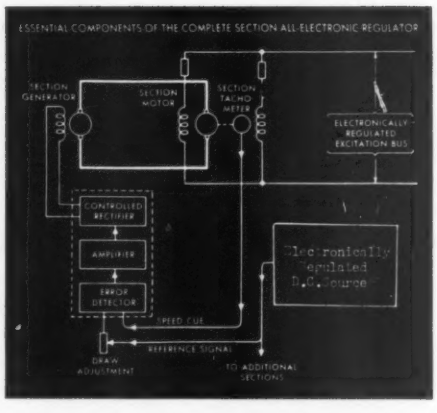
A radial system of power distribution was selected for simplicity of installation and to gain maximum economy. Self-supporting aerial feeders were used to supply the four outdoor substations, which transform the 12,000 volt supply to 2300 volts and 440 volts for power, and 110/220 volts for lighting. Westinghouse oil-insulated, self-cooled transformers are used.

The substations supply 2300 volts to the various buildings through outdoor oil circuit breakers controlled from indoor load centers. Four hundred and forty volt power is connected to the load through No-fuse air circuit breakers. Lightning arresters are provided on the high voltage bus at all substations.

All individual load circuits are protected by No-fuse Deion circuit breakers mounted in centrally located metal-clad cubicles. The motor controllers are also mounted within the same cubicles. This type of control was selected for neatness of appearance, compactness, safety, ease of operation, low cost, simplicity, maximum efficiency and flexible distribution.

The connected motor load is approximately 12,000 HP; and, to assure high power factor, maximum efficiency, feeder economy and voltage stability, 35% of this load is synchronous motors. Most motors used in the mill are of splash-proof construction.

In the woodroom, the drum barker is flat belt driven by a 150 HP, 2300 volt, 700 RPM wound rotor motor. The slab hydraulic barker uses 1000 p.s.i. water pressure from a pump driven by a 600 HP, 2300 volt, 3600 RPM induction motor. The 96" chipper is driven by a 100 HP, 587 RPM, 2300 volt wound rotor motor, and two 64" chippers by V belts from two 150 HP, 2300 volt, 880 RPM wound rotor motors.



THIS DRAWING ILLUSTRATES WESTINGHOUSE EQUIPMENT for the paperboard machine at Springfield, Ore.

Four hundred and forty volt induction motors are used to drive the digesters, screens, knotters, slaker, pumps and screw conveyors in the digester, liquor and wash building. Four pulp washers are driven by 230 volt, adjustable speed, D.C. motors to facilitate speed control. The Hydrafiners are driven by 350 HP, 2300 volt, 450 RPM synchronous motors, separately excited from 230 volt D.C. bus. The three Jordans are driven by 400 HP, 2300 volt, 400 RPM synchronous motors, separately excited from 230 volt D.C. bus.

The new Fourdrinier 13-section machine is driven by a modern Westinghouse electronically-controlled, multiple-generator sectional drive, designed to operate over a speed range of 200 to 1000 FPM. Individual, totally enclosed, force-ventilated D.C. motors are applied to the machine sections through reduction gears and Fast couplings. The horsepower, gear reduction and motor speed at 1000 feet per minute board speed are presented in the following table:

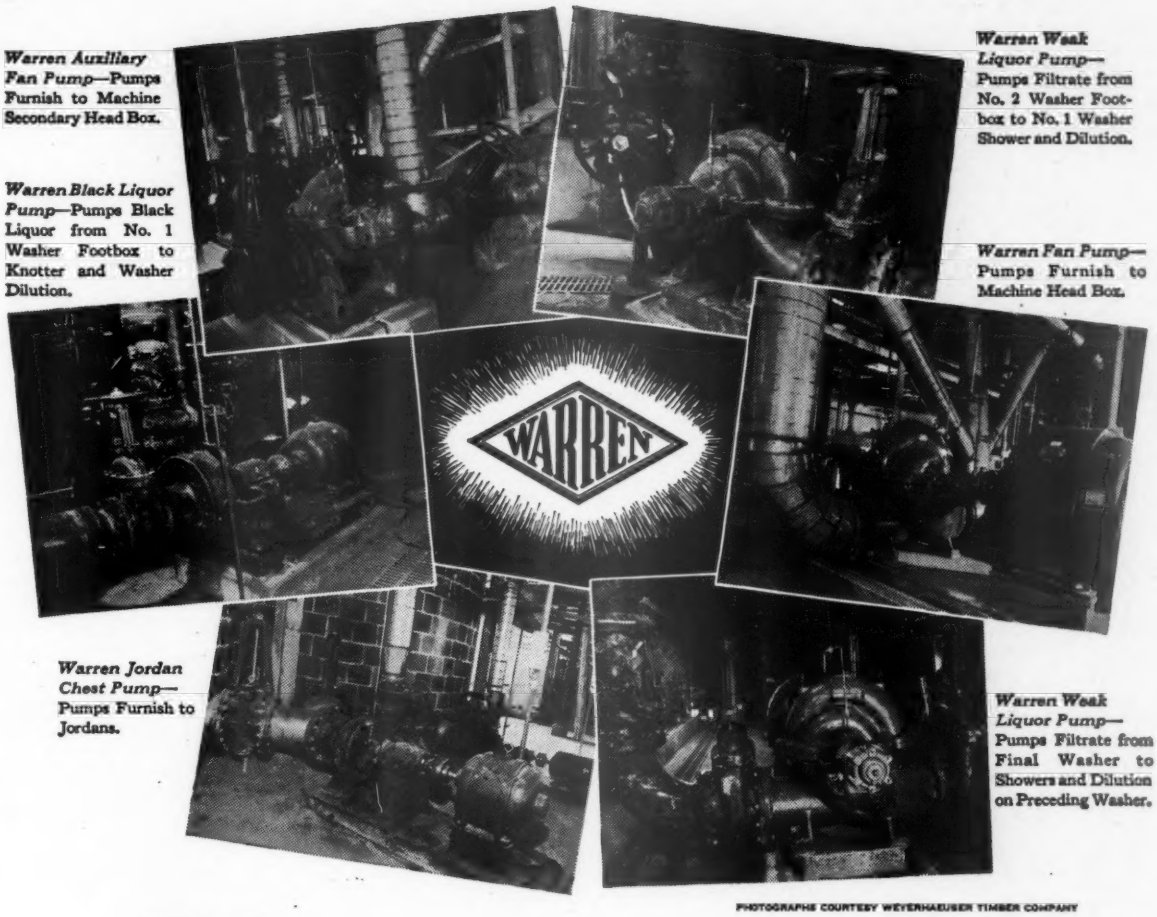
Section	*Motor H.P.*	*Motor Speed 1000'/Min.*	*Gear Ratio*
Couch	200	1000	9.5
1st Press	50	1500	11.8
2nd Press	50	1500	11.8
3rd Press	50	1300	9.5
1st Dryer	75	1340	21.0
2nd Dryer	75	1340	21.0
Breaker Stack	30	1300	9.5
3rd Dryer	75	1340	21.0
Size Press, Top	10	1300	9.5
Size Press, Bottom	20	1300	9.5
4th Dryer	50	1150	21.0
1st Calender	200	1000	7.41
5th Dryer	30	1340	21.0
2nd Calender	150	1300	9.5
Reel	30	1460	13.8
Dandy Roll	2	2000	4.17

The speed of the motors is varied by armature voltage control. Each section motor is supplied with an individual generator of suitable size and rating to control and regulate the speed at any setting of the master control.

Two 8-unit M.G. sets, which are driven by 500 HP, synchronous motors, are supplied to provide the individual generators mentioned. One of the generators provides electronically regulated excitation for the controls, motor fields, cue tachometer fields and generator differential fields.

The section generators are connected to the motors through magnetic contactors. Overload, loss of motor field, undervoltage and current-limit protection are provided in each section control. Section controls are mounted in 13 cubicles located in the machine room basement. A spare control station, master cubicle and the two 500 HP M.G. set motor starters make up the rest of the control section.

Machine operators are provided with individual control stations mounted on the tending side of their respective section. These controls contain start, stop, jog forward and, in the case of the calenders and fifth dryer, slack take-up push-buttons. The two calenders also have jog reverse push-buttons. Draw-adjusting potenti-



Warren Auxiliary Fan Pump—Pumps Furnish to Machine Secondary Head Box.

Warren Black Liquor Pump—Pumps Black Liquor from No. 1 Washer Footbox to Knotter and Washer Dilution.

Warren Weak Liquor Pump—Pumps Filtrate from No. 2 Washer Footbox to No. 1 Washer Shower and Dilution.

Warren Fan Pump—Pumps Furnish to Machine Head Box.

Warren Jordan Chest Pump—Pumps Furnish to Jordans.

Warren Weak Liquor Pump—Pumps Filtrate from Final Washer to Showers and Dilution on Preceding Washer.

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50 WARREN PUMPS

were selected by Weyerhaeuser Timber Company for their ultra-modern Kraft pump mill at Springfield, Oregon. There is a Warren Pump specifically engineered and built by pump specialists to successfully handle practically every pumping service in pulp, paper and board mills . . . Outstanding mills from Coast to Coast specify, "Warren". . . Why don't you?

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PP-16

ometers and ammeters for section load indicating are also mounted in the section controllers.

A master control station is mounted on the tending side of the machine, and from this station the operators can set the speed of the machine wherever desired by simply turning a pilot rheostat. A tachometer calibrated in feet per minute is mounted in the station. An emergency stop-button for stopping the entire machine is also provided.

The speed of the sections is accurately maintained by individual electronic regulators. They are composed of three main components; namely (1) a detector circuit, (2) a signal amplifier, and (3) a power rectifier circuit. The detector circuit matches the output of an A.C. inductor type cue tachometer generator (which is mounted on the section motors) to an electronically regulated, direct-current master reference voltage. Normally, these voltages balance; but, during load changes or over-all speed changes, a slight unbalance in the detector circuit is amplified by the amplifier circuit, and the power rectified varies the field excitation of the section generator, which in turn changes the generator armature voltage to keep the speed of the section motor in balance with the master reference. Over-correction, which might cause hunting of oscillation, is prevented by an anti-hunt and time constant circuit. These circuits modify the detector signal sent to the amplifier to prevent over-shooting and too rapid changes.

The electronic regulators consist of 14 identical sections, each containing three panels mounted on a hinged rack. This arrangement facilitates inspection of the wiring. Single layer wiring was used to simplify wire tracing and trouble-shooting. The panels are connected to the hinged rack by four bolts, and the wiring is connected to the cubicle circuits by removable finger board connectors. Changing panels can be completed in approximately 20 minutes, thus averting costly shut-downs.

The Beloit reel is driven by a 30 HP, D.C., adjustable speed motor. The speed of the reel is changed from the master control station, and draw adjustment is provided by a manually-operated rheostat in the motor field circuit.

The rewinder is driven by a 75 HP, 230 volt, D.C., adjustable speed motor over a speed range of zero to 4000 FPM. Rolls up to 72 inches in diameter and 154 inches long can be handled by the winder.

Two Nash vacuum pumps are each driven by a 250 HP, 2300 volt, 225 RPM synchronous motor, separately excited from a 230 volt D.C. bus. Two 50 KW, 230 volt motor-generator sets are used to provide D.C. for washer motors and synchronous motor field excitation. A third 50 KW, 230 volt auxiliary M.G. set is provided for stand-by duty. The switchgear is arranged so that any of the D.C. generators may be placed in or out of service as may be required.

All of the drive motors of the paper machine are force-ventilated by a 10,000 CFM fan with a 4½-inch water column static pressure, driven by a 10 HP, 1750 RPM induction motor.

Westinghouse furnished the generation and distribution apparatus used in this board mill, and over 85% of the motors installed. The apparatus has been designed and coordinated to assure long life and efficient, dependable operation.

THESE PICTURES ILLUSTRATE SOME OF THE EQUIPMENT discussed in this article by Mr. Weleber and Mr. Tudor.

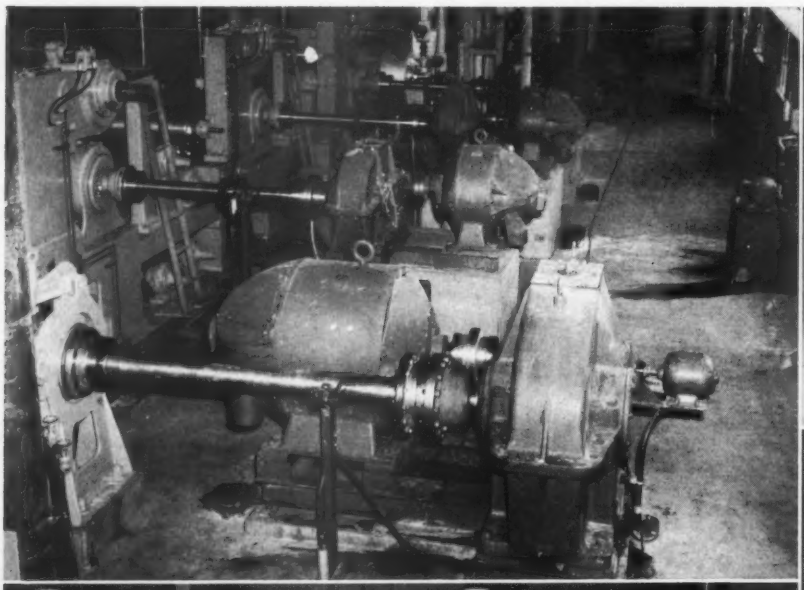
Top left: Backside of paper machine, showing couch motor and tachometer and other motors and reducers for first, second and third press and first dryer section.

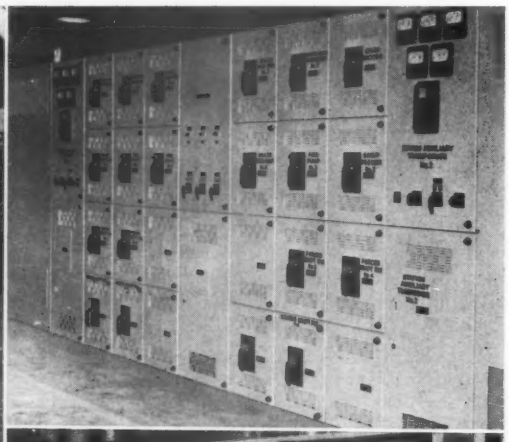
Middle left: Main generators and distribution switchboard (11,500 volts). Circuit breakers are Westinghouse Type DH Drawout Air Circuit breakers. This shows Silvershot regulators.

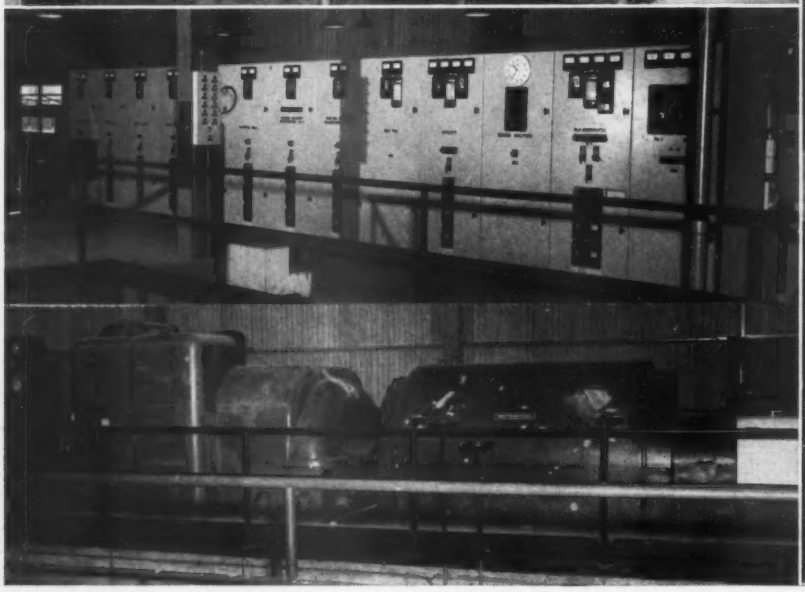
Lower left: One of two turbo-generators in Power Plant. This is Westinghouse 9375 KVA, 11,500 volt, 3-phase, 60 cycle 3600 rpm.

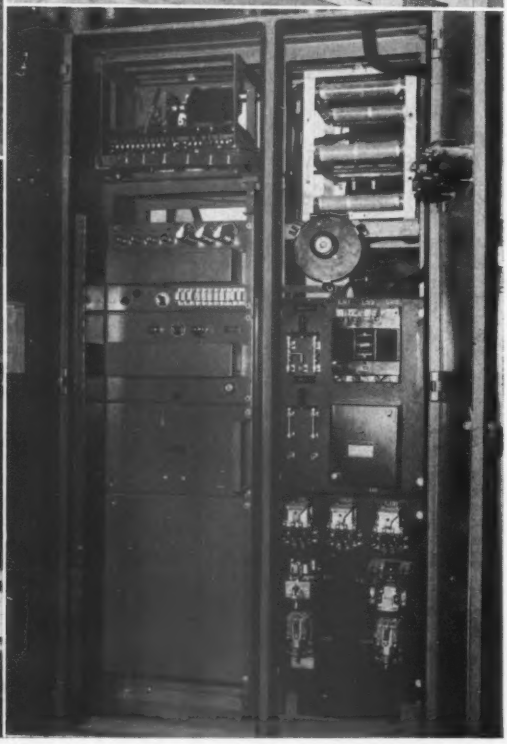
Upper right: View of 440 volt load center in Power Plant showing Type ASL Air-cooled 1,000 KVA Transformers. Also air circuit breakers.

Lower right: Machine Room Master control cubicle showing voltage regulator; motor operated rheostat; manually operated rheostat and relays and resisters.









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Auxiliary Roof Exhaust
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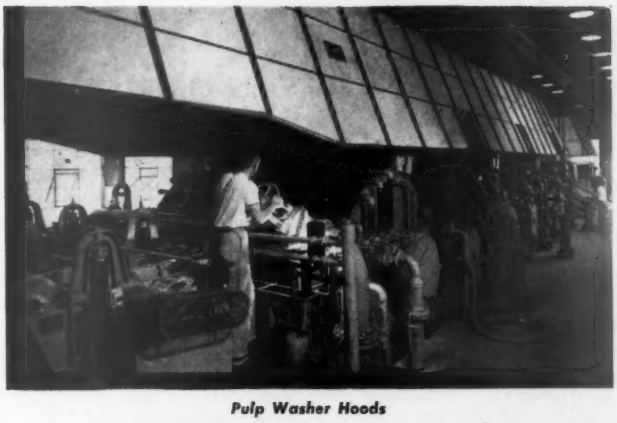
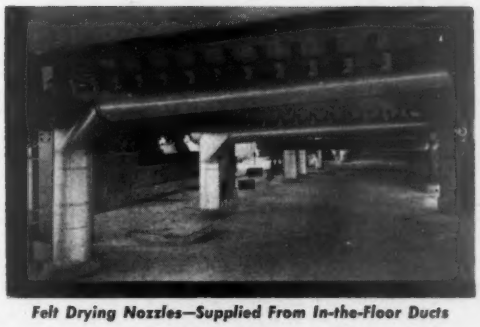
D.C. Motor Cooling Systems
DECO Hi-Jet System
Basement Ventilating Units
Calender Cooling System
Trim Conveying
Pulp Washer Hoods



Pulp Washer Hoods



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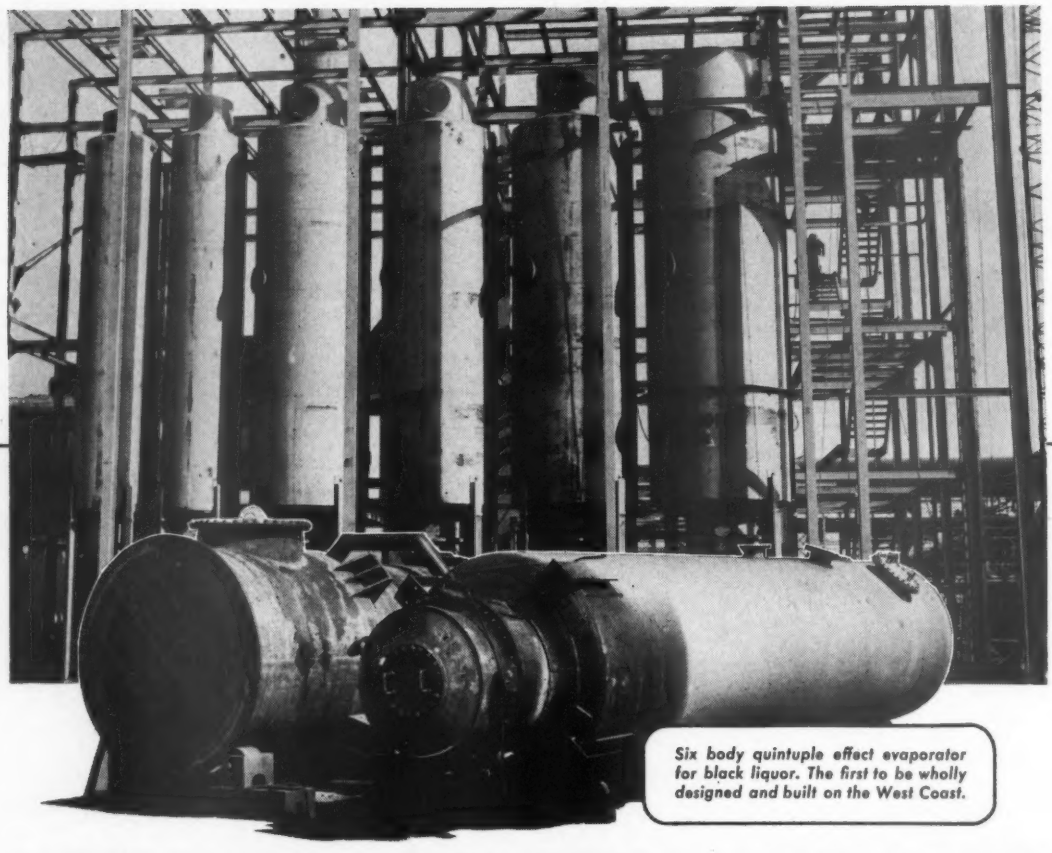

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NEW PROCESSES AT HARTSVILLE

Sonoco Improvements

Moving forward to hold its place in the forefront in serving textile and other industries with varied converted items, Sonoco Products Co. has virtually completed an expansion program which included a re-designed wood yard, a new semi-chemical pulp mill, and a new Fourdrinier (No. 8 machine) that adds 100 tons daily to its paper supply at its Hartsville, S. C., operations. This is the first Fourdrinier here, the other seven being cylinder machines.

The final task, a semi-outdoor type Babcock & Wilcox power boiler producing 125,000 lbs. of steam per hour, is underway with completion scheduled early in 1950. With this, the boiler supply will reach 290,000 lbs. per hour, backing up the paper mill that has been built up to 350 tons per day.

As it stands, the expanded Sonoco mill presents a blending of old and new both in regard to facilities and in its products. The original plant was built on the banks of the creek where a mill dam backed water upstream for two to three miles, providing about 150 HP of power from an average 12-foot fall through the race.

One of the best equipped machine shops in a Southern mill is here—and it is described fully in this article.

To create an efficient wood yard, the company is taking water from the lake through a 500-foot concrete flume into which the pulpwood is discharged from railcar or truck, or is dropped by the Lorain orange peel equipped crane from the reserve. The flume costs $20,000; conveys the pulpwood entirely by gravity flow. The water required to float 60 cords per hour would generate 3 HP.

The mill still retains the hydro electric installation, linked into its power supply. From it comes sufficient current on week-end and other down periods to service the plant.

The flume is flanked on each side by

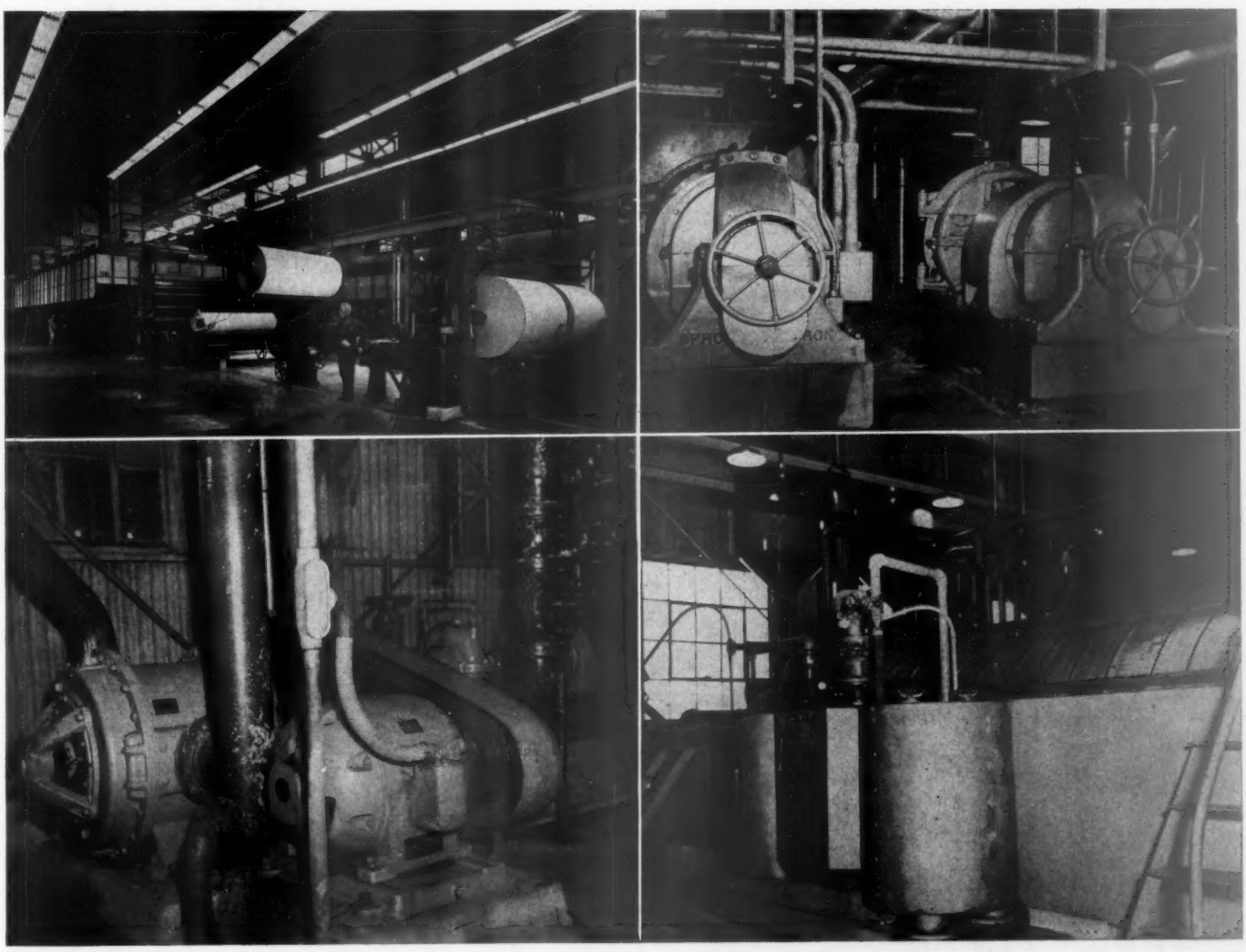
VIEWS AT THE HARTSVILLE, S. C., MILL of Sonoco Products Co.

Top left: Bagley & Sewall dry end of new No. 8 Fourdrinier paper machine and calender, reel and rewinder.

Lower left: This Nash vacuum pump services Oliver United washers.

Upper right: Two Sprout-Waldron refiners which operate in parallel, refining washed stock behind the Oliver washers. They are on floor below the washers. Two Sprout-Waldron refiners also treat hot brown stock ahead of the Oliver washers.

Lower right: DeZurik consistency regulator between the Oliver washers and Sprout-Waldron refiners.



railroad spurs; one from Seaboard Air Line, the other Atlantic Coast Line. Each is able to deliver pulpwood without the cars leaving the originating carrier's tracks. Each shares in the profitable outbound movement of company products.

The lake created by the mill dam is right in Hartsville, providing recreation for all —fishing, boating, swimming. It is graced with several clubs, one of which is company-owned for employes' use. The maximum depth to original creek bottom is about 20 feet.

Preparation of Wood Pulp

Reaching the end of the flume, the pulpwood is raised by a conveyor to the 12 x 30-foot D. J. Murray barker and then to the chipper house. Here there is a rebuilt No. 88 Carthage chipper and Waterville Iron Works chip crusher. Originally the Carthage unit was a two-knife job driven at 200 rpm's by a 200 hp electric motor. The hardwood proved tough going, with stalls resulting, so the unit was rebuilt with a bigger flywheel equipped with four knives. It is driven at 325 rpm with the same 200 hp motor, turns out three times the volume; does not stall.

The conveyor structure from barker to chipper to pulp mill (across the creek) was fabricated according to company designs, by Roderick O'Donoghue. Chip screens came from Robins.

There are four chip bins each with 3-cook capacity serving the four 15-foot diameter, 8.366-ton air-dry capacity rotary digesters. Of these, three came from Biggs Boiler Works, Akron, O., and one digester from Combustion Engineering. Direct cook is used. The blow down liquor is mixed with the first filtrate which is used for dilution ahead of the first Sprout-Waldron refiners and for additional dilution ahead of the brown stock washers.

The chips go to the leach caster pits, then by conveyor to the hot brown stock refining which is performed by two Sprout-Waldron & Co. units driven by 400 hp 900 rpm synchronous motors. The stock then goes to a chest from which it is pumped to two 8 by 16-ft. drum 2-stage Oliver United washers, affording a four-stage washing.

LEADING PERSONNEL AT SONOCO PRODUCTS CO., Hartsville, include (l. to r.): RICHARD G. COKER, Secretary and Chief Engineer; WALTER HARVEY, Wood Procurement Manager; and CHARLES N. ROGERS, Ass't Chief Engineer.

Personnel at Sonoco Products

James L. Coker is president of the company and C. W. Coker is vice president of Sonoco Products Co., at Hartsville, S. C. C. K. Dunlap is vice president in charge of engineering and development. Richard G. Coker is secretary and chief engineer. His design assistant chief is C. D. LeHardy; his general engineering assistant, Chas. N. Rogers.

J. B. Gilbert is treasurer; W. H. Bailey, personnel manager; P. C. Coggeshall, purchasing agent. C. H. Campbell is vice president in charge of sales.

Dr. J. E. Mills is director of chemical research and Dr. J. E. Copenhaver is chief chemist.

J. H. Martin is general production manager. P. L. McCall is general superintendent in charge of production of the new No. 8 machine, pulp mill and woodyard. W. H. Morgan is assistant superintendent of the No. 8 unit. Stanley Boyd is superintendent of the pulp mill. E. H. Heustess is superintendent of the woodyard, barking and chipping operation. On second and third shift, the machine tenders are in charge of operations. They are: Hugh Byrd, Roy Lynch, and Leslie Blackmon.

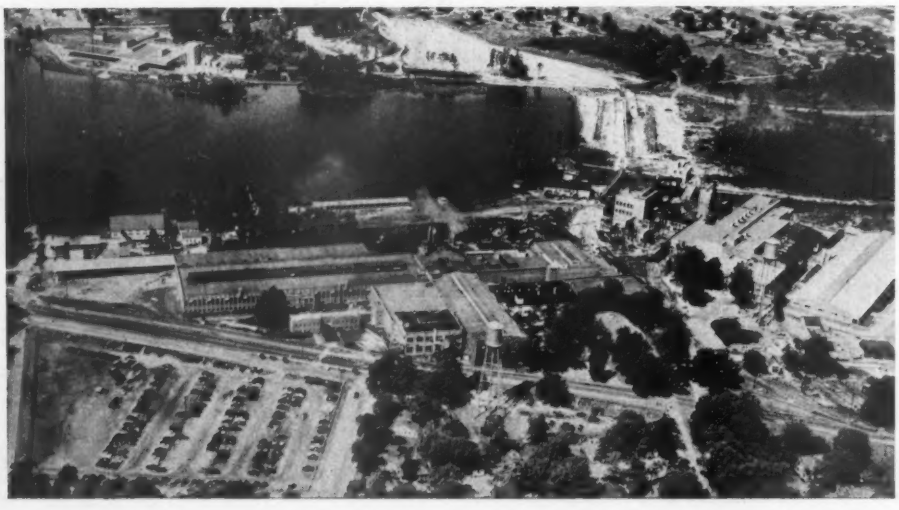
R. B. White is paper mill superintendent and J. L. Lanford is assistant paper mill superintendent of the cylinder mill. Tour foremen include: Bealor Langston, John Tyner, Clyde Langston, and Robert Driggers. L. A. Turnage is electrical superintendent. Walter Harvey is wood procurement agent.

It is then repulped, sent to a chest, and then, after passing through a DeZurik consistency regulator and dividing box, goes to two Sprout-Waldron refiners in parallel, and then is pumped to a refined semi-chemical stock chest. From this chest it is pumped to the paper mill semi-chemical chest.

The pulp mill uses sodium sulfite in cooking, storing the soda ash in a Neff & Frye silo from which it moves to the dissolving tank where fresh water and steam is added. It is then pumped to the sulfite tank from which it is circulated through the sulfiting towers. The sulfur is burned, the fumes going through the tower where they are absorbed by the sodium carbonate solution. After one tank has been sufficiently sulfited, the process is shifted to a second tank for processing. Shartle Bros. pumps are used for the acid. A second sulfur burner is being added.

Waste discharge from the pulp mill is ponded at time of low waterflow for release at full creek flow to provide adequate dilution.

AIR VIEW OF SONOCO PRODUCTS CO. at Hartsville, South Carolina.



Preparation of Waste Paper

The waste paper is fed to a 12-ft. Shartle-Dilts Hydrapulper with junk remover. It then flows to a riffler, then to a Shartle thickener; to a chest, then to two Sprout-Waldron & Co. refiners so arranged to operate either in parallel or series. It is diluted from the unclarified white water chest, Goulds pump being used; pass over two 10-plate Impco screens in parallel.

Then after passing through another Shartle thickener, the stock is dropped to a refined waste paper chest. Leaving this, it goes to its own DeZurik consistency regulator, and then is blended with the other two stock sources by the proportioner.

Stock from the semi-chemical chest is pumped in part to a DeZurik regulator and part up to two Oliver United save-alls used as sweetener stock. There it is mixed with water from the unclarified white water chest, which is fed from the seal pit, the wire pit overflow and fresh water (float control) make-up. After going through the savealls this stock returns to the semi-chemical stock chest, and the water goes to the clarified white water system where it is used for dilution in the showers on the paper machine and the pulp plant. Water that goes to the sewers is metered and sampled with a DeZurik sampler.

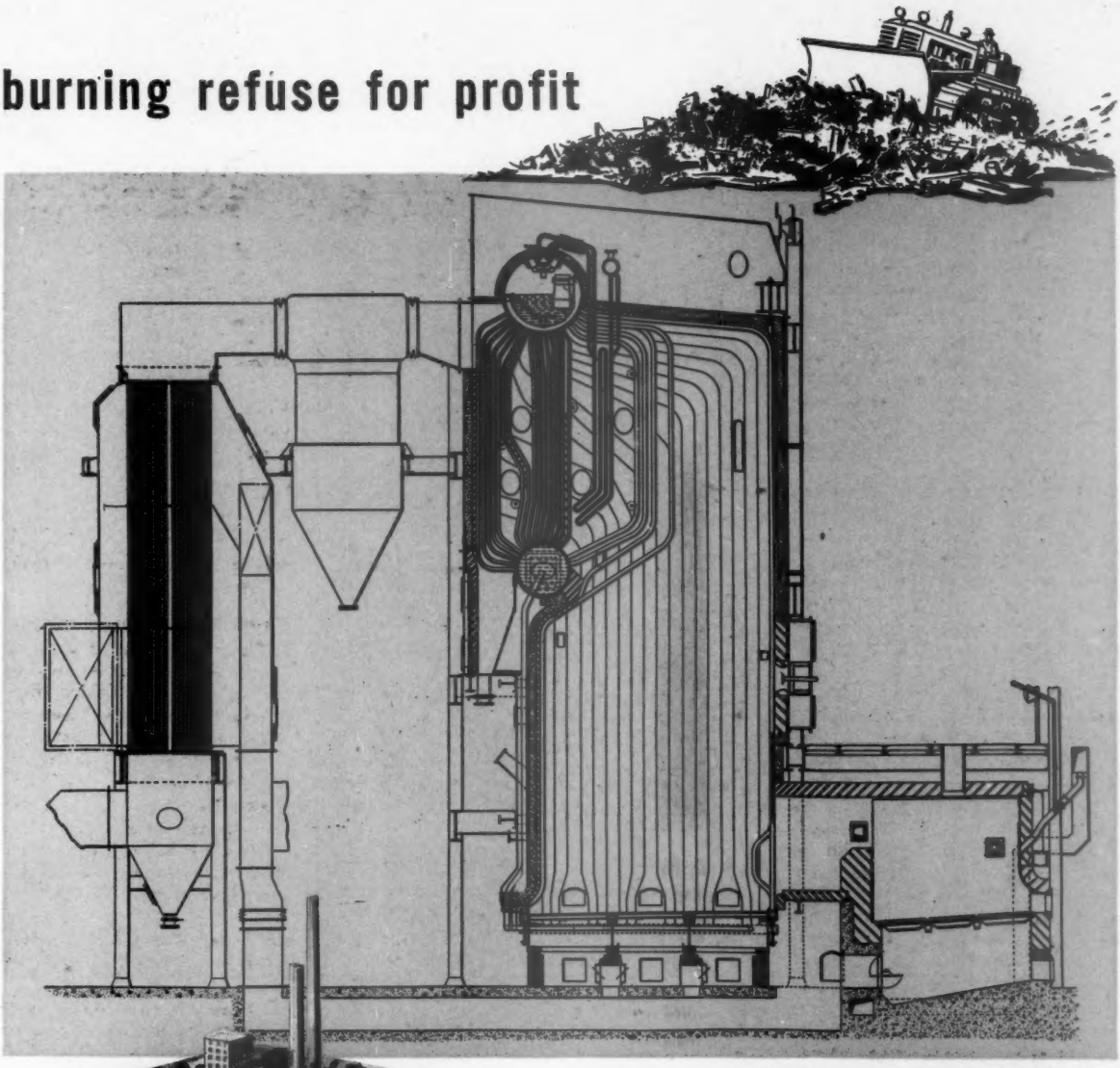
Broke goes to a beater in the basement, is pumped to the couch pit, then to a consistency regulator, after which it is blended. The stock then drops to the machine chest.

From here a Warren pump passes it to a DeZurik regulator and proportioner to two Shartle Bros. Miami No. 2 jordans in parallel, thence to the surge box then by gravity to the fan pump.

Description of Paper Machine

The new No. 8 Fourdrinier machine started on waste paper pulp in Septem-

burning refuse for profit



at New WEYERHAEUSER power plant

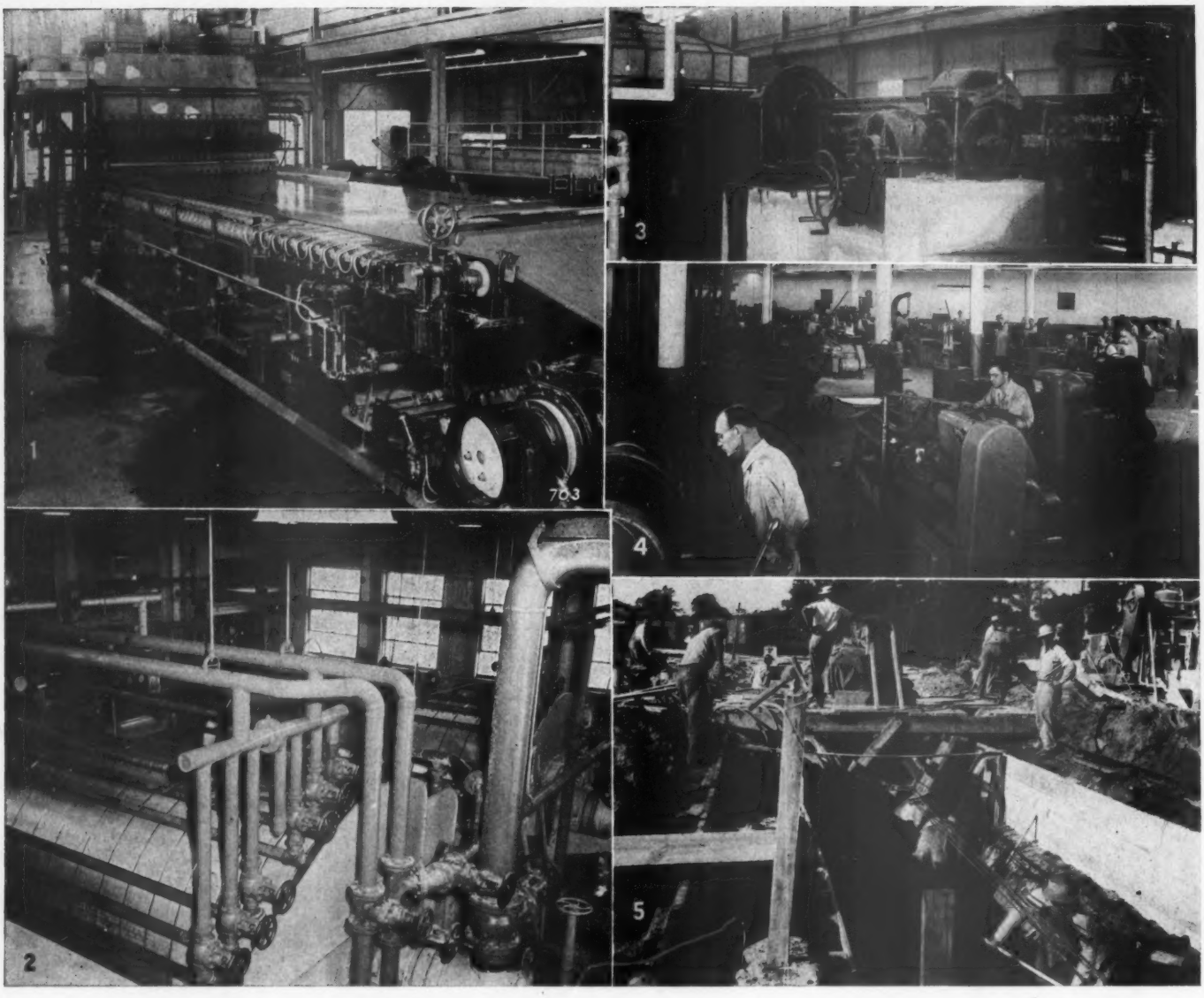
The power plant for Weyerhaeuser Timber Company's new operation near Springfield, Oregon, was specifically designed by United Engineers & Constructors, Inc. to burn hogged fuel of high moisture content with high efficiency. These three units for power generation and process steam are Two-Drum Stirling Boilers with B&W Tubular Air Heaters.

Capacity of each unit is 85,000 lb of steam per hr at 600 psi and 675 F. The furnace is designed to burn fuel averaging about 40 per cent moisture. Temperature of air leaving the air heater is 462 F.

Closely associated with the paper and pulp industry for more than 75 years . . . B&W is completely familiar with this industry's special needs and problems. In the future, as in the past, mill operators can continue to rely on B&W's experience, research, and resourceful engineering to design and build steam generating and chemical recovery units to satisfy any operating conditions.

BABCOCK & WILCOX

P-44



EQUIPMENT IN ACTION AT SONOCO PRODUCTS CO, Hartsville, S. C.

1—Downingtown stainless steel Fourdrinier. Suction couch with "double box" is in foreground and stainless head box with high and slow speed slice in the background.

2—View of washer room, showing two 2-stage, 8x16-ft. Oliver United Filter Co. washers.

3—Modern, multiple shake mechanism designed by Downingtown engineers, for machine in No. 1 plant. This is last word in adaptability and simplicity.

4—View of Sonoco's engineering dept. shop No. 1, rated as outstanding in the South.

5—Laying concrete lining for wood flume, using movable form pulled on rails and pouring a near-dry mix. This resulted in an original $40,000 bid job being done for $18,000.

ber, 1948, and the wood pulp mill went into production a month later. The paper machine has a wire 144 inches by 92 feet. It is designed to produce 100 tons of .009 container board daily at 600 feet/min. However, the machine is designed for a top speed of 1,000 fpm. Fourdrinier and press section were made by Downingtown Mfg. Co. There are nine stainless steel flat suction boxes. An unusual feature is that two suction boxes are installed in one couch roll. These have their vacuum connections, each in opposite ends and either or both may be used at one time.

Bagley and Sewall furnished the dry end, which includes 48 paper and 8 felt dryers of 48-inch diameter by 138 inches long. The same source furnished the calender, the rewinder, and gear drives for the entire machine, clutches being by Air-Flex. The drive is a Westinghouse steam turbine with gear reduction to the line shaft. The machine has 17 Lodding Engineering Corp. dryer doctors of non-oscillating type. Lodding also furnished a breast roll doctor, oscillating wire roll doctors and oscillating top press roll doctors for this machine. It is equipped with Bird felt conditioners.

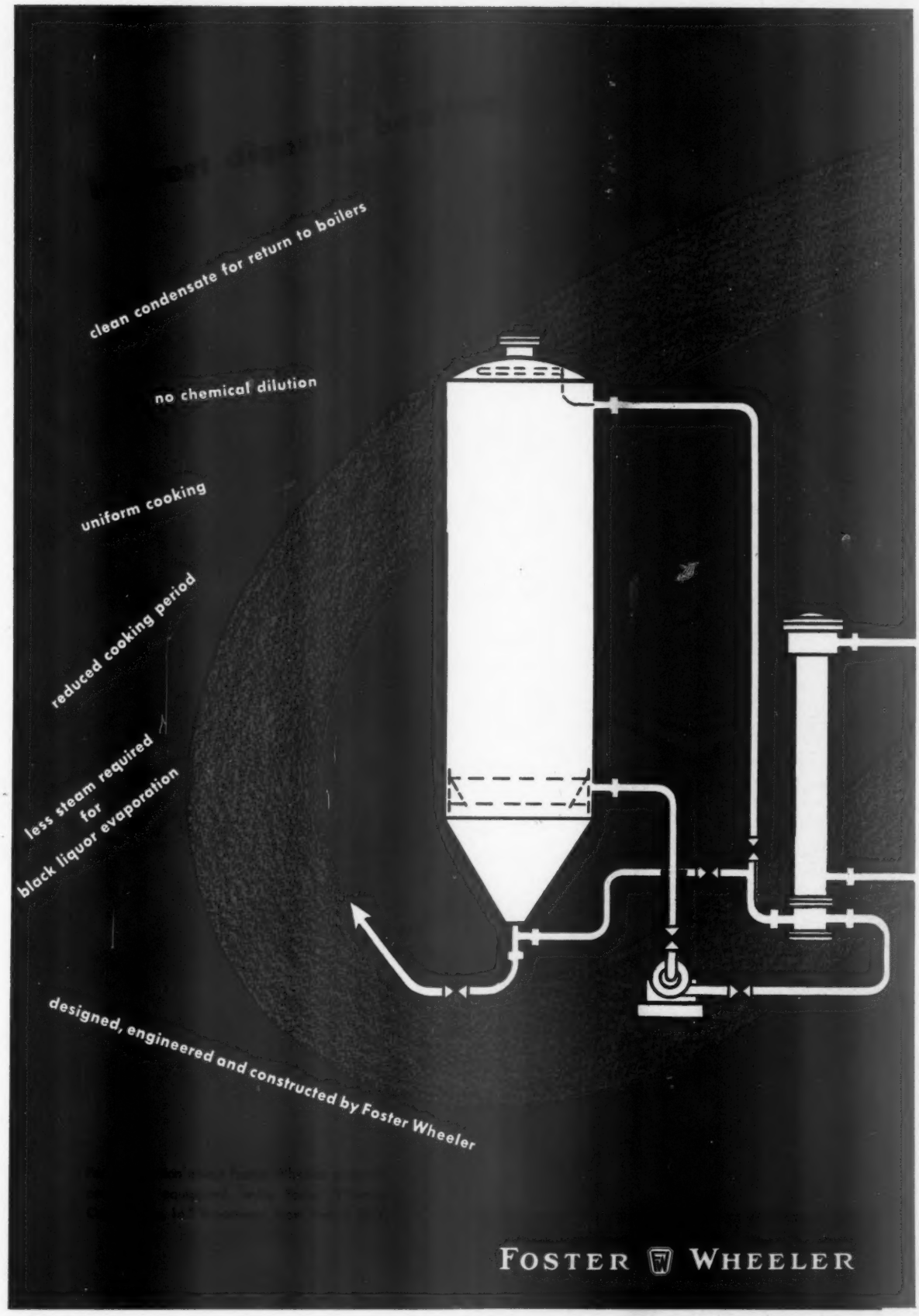
Drainage is by Midwest-Fulton Co., instrumentation by Foxboro with Brown steam flow meter; Bowser, Inc., furnished lubrication; Nash Engineering supplied vacuum pumps; and the machine hood and ventilating system were by Ross Engineering Corp.

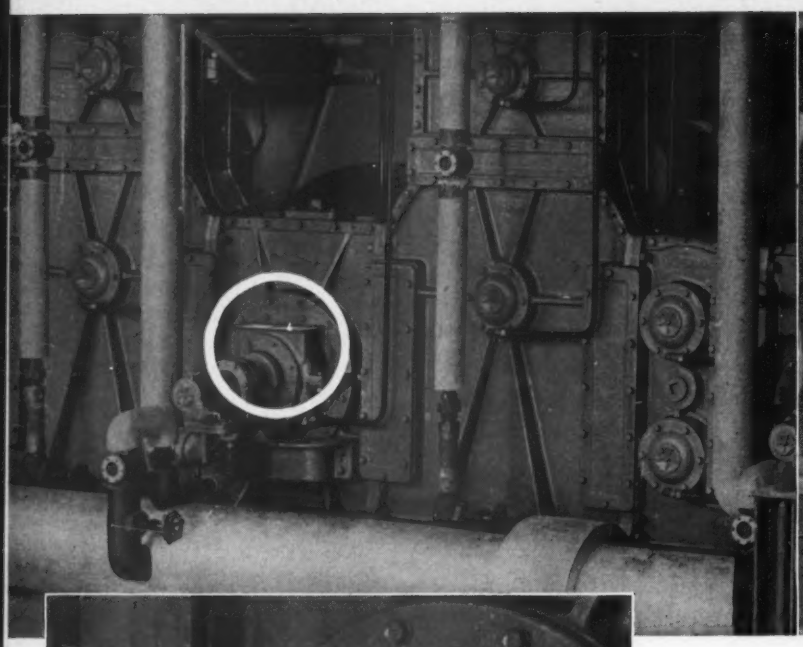
Furnish for the machine consists roughly of 80% semi-chemical pulp made from hardwood (gum), 20% waste paper, and, of course, is returned for use. Each source feeds to one of three DeZurik consistency regulators which in turn feed to a stock proportioner.

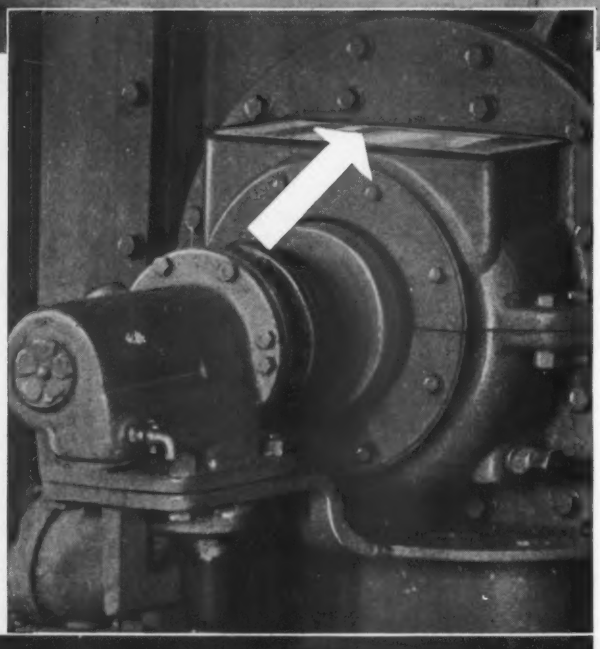
The fan pump of 5,000 gpm capacity is fed by gravity. All pumps except the fan and machine chest are from Goulds, all consistency regulators from DeZurik, all chest agitators from Improved Paper Machinery Co. This applies in both paper and pulp mill.

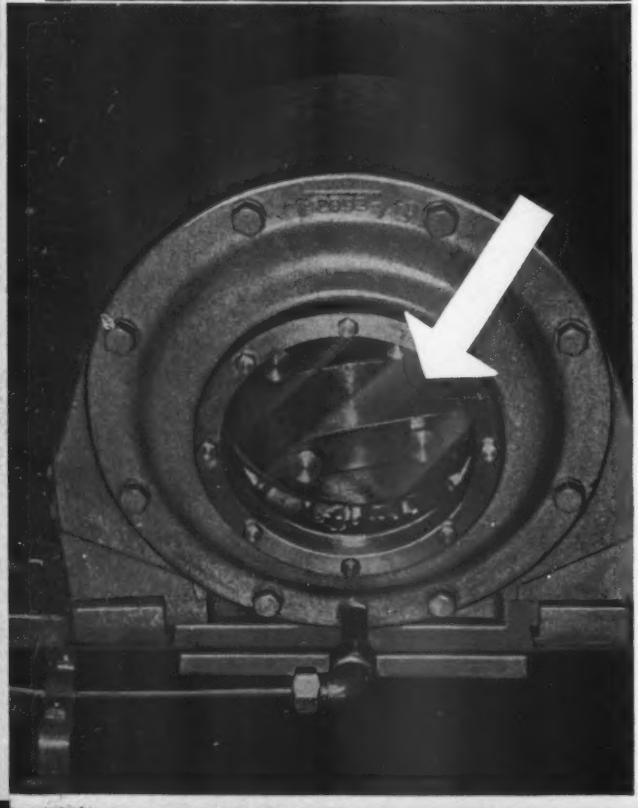
Some interesting detail on the Downingtown equipment is pointed out by Theodore A. McArn, Downingtown development engineer.

The Downingtown-designed headbox is


clean condensate for return to boilers
no chemical dilution
uniform cooking
reduced cooking period
less steam required for black liquor evaporation
designed, engineered and constructed by Foster Wheeler
FOSTER WHEELER







THESE WINDOWS LET YOU SEE THE BEARINGS WORK

You don't have to "guess" about oil flow or bearing performance in the new Puseyjones Machines.

Here are lucite windows which allow you to observe the flow of oil and the condition of the bearings *without dismantling*. Save time. Help to avoid breakdowns.

When it becomes necessary to remove the bearings on the dryer journals in the new Puseyjones Machines, you can forget cumbersome screw jack pullers. A high-pressure hand pump builds up the oil pressure under each of the bearings and literally forces it off.

With design improvements and labor-saving devices like those described above, no wonder we are proud of the latest Puseyjones Machines. The Paper Industry has set production records on Puseyjones Machines for three generations. Our engineers will gladly show you why.

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THE SIGN OF TRADE MARK SUPERIOR QUALITY

stainless steel with five inlets and several passes to even the flow. It is equipped with two stainless steel agitating rolls and a foam shower. Two stainless steel slices for high and low speed with adjustable lips are provided. The making board is constructed of Ryertex and is adjustable for wear.

Wire changing is extremely simple, incorporating an unusual feature of Downingtown design. Three wedge jacks connected by a common shaft and operated by one ratchet wrench at the breast roll end are arranged to free three supporting blocks which are removed from the front side. Space is thus provided to pass the wire through in making changes. The breast roll swings down to provide slack for the wire, and the blow roll and lump breaker are mounted on the press section with provision for lifting them up during wire change. The deckle squirt and tail jet assembly is cantilevered from the rear rail and is simply swung around toward the press section without removal. Thus many of the usual making and breaking of connections are eliminated.

New level adjustment while running makes it possible to incline the Fourdrinier so that the lead off roll may be set from 1½" above to 4" below the breast roll, while running, by adjusting a single handwheel.

The use of round tubular stainless steel shake rails which are easily cleaned, is another innovation. As this section is equally strong in both horizontal and vertical directions, the rails resist both weight and whip loads successfully.

Table rolls, adjustable vertically while running, are constructed of aluminum tubes, rubber covered, and are dynamically balanced, supported by anti-friction bearings.

The Downingtown multiple shake mechanism is sturdy in design, and requires minimum maintenance. The stroke can be varied from zero to ⅝" by adjusting a lever, while the machine is running. A variable speed motor and Vee belt drive take care of variation in number of shakes.

Another Downingtown feature is the motor operated wire stretch rolls, provided with automatic safe guards to prevent overtravel.

Downingtown has developed a cantilevered assembly of deckle squirts and tail jets to eliminate the necessity of removal in changing the wire. Double deckle squirts are provided on front and rear, while the tail jet is operated by a handwheel on the front side.

P. L. McCALL, Supt. of the company's new Fourdrinier production, was recently named a director of Sonoco Products Co., Hartsville, S. C.

Making and breaking of piping connections has always been the "bugaboo" of making wire changes, so Downingtown engineers designed the piping for this machine, so that there is "nothing to take apart." All shower and suction connections are on the rear side and all shower valves have a handwheel control from the front side.

Machine Shop Is Important Unit

The Sonoco Products Co. has been in the forefront in development of paper cones, tubes, spools and other paper specialties used in the textile and other industries. This has been achieved in part from forward design and production of its own converting machinery. One effect has been to make the company machine shop conscious and part of the expansion program was the advancement of this phase.

A new two-story engineering building of modern construction 102 by 140 feet houses the machinery production shop and includes the 30 x 102-foot space for engineering offices and drafting room. Also provided is a file room 20 x 40 for prints, and a fire-proof vault 18 x 11 for tracings. In this shop is some of the best machinery equipment in a Southern mill.

Equipment includes: six 12-inch, three 16-inch, eight 18-inch, three 24-inch and one 30-inch lathes of various makes; one American shaper of 36-inch stroke, one No. 2 Cincinnati shaper of 30-inch stroke, and one No. 4 Cincinnati shaper of 36-inch stroke; two No. 2 Cincinnati milling machines, one No. 4 Cincinnati milling machine; two radial drills, one Liberty open side 30-inch bed planer, four various bench drills, five pedestal drills (2¼" largest); one tool grinder, one drill grinder, two Cincinnati grinders, one Carbolay tool grinder, two bench grinders, three pedestal type grinders, one Dual No. 2 cutter for irregular shapes and curves, and one Racine 12 x 12 power hacksaw.

Important items (particularly during the war for rebuilding worn parts) are a homo-carb heat treatment furnace, and a metallizer. There are 83 men in the shop, including Boyd Lawhon, shop superintendent.

All of this building is air-conditioned except the heat treatment section, the metallizer, and forge. Humidity control is effected throughout the year. The entire interior is done in color dynamics. The windows are thermo-pane and glass block. The engineering offices are fitted with acoustic type ceilings. There is a complete engineering library, including periodicals.

The equipment in the millwright's shop includes a 42-inch American lathe, a milling machine, a Lobdell roll grinder, a 38-inch Monarch lathe, and other big equipment to make an even dozen. About the only job that can't be performed for the big machines is to recover the rubber rolls. The shop is 60 by 120, and personnel totals 38, including supervision.

The new No. 8 machine has a small service shop adjoining its site, and the other seven machines are served by the millwright shop mentioned above.

One of the interesting features at Hartsville is the extensive uses made of over 30 Clark Equipment Co. lift-trucks and touring tractors for handling of manufacturing materials and products all the way through the plant.

Personnel and Engineering

James L. Coker is president of the company and C. W. Coker is vice president and director of purchases. Richard G. Coker is secretary and chief engineer. His design assistant chief is C. D. LeHardy; his general engineering assistant, Charles N. Rogers.

J. H. Martin is production manager at the Hartsville and Rockingham, N. C., divisions and R. B. White is superintendent of paper mills at Hartsville.

P. L. McCall is superintendent of the No. 8 machine paper mill. Stanley Boyd is the pulp mill superintendent. Ellie H. Heustess is woodyard superintendent.

Engineering design work for the expansion was performed by consulting engineer Roderick O'Donoghue, 420 Lexington Ave., New York. The expansion represents an investment of approximately $2,000,000. General supervision was by the company under the direction of Mr. Rogers, with Floyd Chitty, Jr., and Eddie Webb as close assistants. The pipe work in the new machine and pulp bleaching is exceptionally well laid out, with lines running east-and-west at same elevation and likewise north-and-south lines are at same elevation. The general building contractor was Fiske-Carter Construction Co., Spartanburg, S. C., with Industrial Piping, Inc., Charlotte, N. C., piping contractor and Huntington-Guerry Electric Co. Greenville, S. C., electrical contractor.

Construction of the concrete flumes presented an interesting task. The original bids ran $40,000 and more for the 500

SONOCO DEVELOPED A SPECIALTY PRODUCT

The history of the development of Sonoco special products, made at the mill described in this article, goes back a half century. At the main plant at Hartsville, S. C., a better and less expensive product was developed on which to wind textile yarns—a paper cone in the place of the old wooden cone.

When the first chemical fibers were developed, the paper cones used for cotton and woolen yarns were not suitable, because they had a tendency to split the fiber, especially in the magazine creeling operation. If the cones were made sufficiently smooth so that the filaments would not be damaged, the yarn would not stay on it. Experiments with different cone tapers led to the final adoption of a taper of 3° 30′ for synthetic yarns and to the development of special noses and lacquers for the cone tips, which led to be resistant to all chemicals encountered in the finishing operations, according to a review published in Rayon and Synthetic Textiles.

The lacquer is now prepared by Sonoco not only for its own use but also for its many customers for finishing synthetic carriers. The result of these studies are the "Velvet Surface cones" further modified by bands to prevent slippage and the "Unitex Surface cones," flocked cones provided with additional holding surfaces.

feet, which was considered high. Actual laying of the concrete was done for $18,000 by means of a moveable form. The flume has a maximum opening width at the top of seven feet, maximum clear depth of five feet, and the bottom is rounded by a radius of 18 inches. A 1:2:4 mix was used. The trench was excavated to the desired depth and shape and a form for the inside mounted on skids to slide on a rail on each side. The concrete was poured dry at the front end of the 20-ft. form, as it was winched forward. By the time the rear end came clear the concrete had set sufficiently to hold.

Southern Meeting

The annual meeting of the Southern Pulpwood Conservation Association will be held at the Hotel Biltmore, in Atlanta, Ga., on Feb. 15, according to announcement of Henry J. Malsberger, Ass'n Forester-Manager.

DEVALUATION AND CANADA

Currency devaluation has had an unsettled effect on Canada's newsprint industry, faced by suggestions by American publishers that prices be reduced and by British buyers hinting at diverting business from Canadian mills to Sweden.

A **PULP & PAPER** editor, traveling across Canada and interviewing mill executives, found spokesmen frankly disturbed but generally agreed that it would take several months to determine the full effect of the devaluation of the Britisn pound and the Canadian dollar.

Canadian newsprint producers are skeptical of reports Britian will divert all orders to Scandinavian countries. London advices were that Scandinavian mills had been asked provisionally to reserve more than 100,000 tons of newsprint for 1950. This is more than double the amount now received from Sweden and Finland and is equivalent to the 1949 Canadian contract.

"Two important facts seem to be overlooked," said one company manager. "There is a limit on what Scandinavian mills can produce. Clarence Howe (Canada's minister of commerce) wasn't just talking for effect when he remarked the other day that Powell River Co. alone produced more newsprint than all Sweden. Then there's the fact that the Canadian industry has had relations with the British newsprint market for years."

But Britain has cut sharply other purchases from Canada. The British government recently reduced the price of newsprint by $11.90 a ton, bringing the price to consumers to £31 7s 6d a ton because of lower pulp prices.

Elliott M. Little, president of Anglo Canadian Pulp & Paper Mills and Anglo-Newfoundland Development Co., said "The Canadian industry may be on short time next year. A good deal depends on the U.S. market."

Sir Eric Bowater, president of Bowater's Pulp & Paper Mills, announced his Newfoundland company, which in the past catered to the British market, is increasing production to meet orders from the U.S. for 1950.

So far as the U.S. market is concerned, Canadian newsprint mills in early October had no intention of cutting their $100 a ton price.

Montana Mill Sponsors Can Sell Stock in Other States

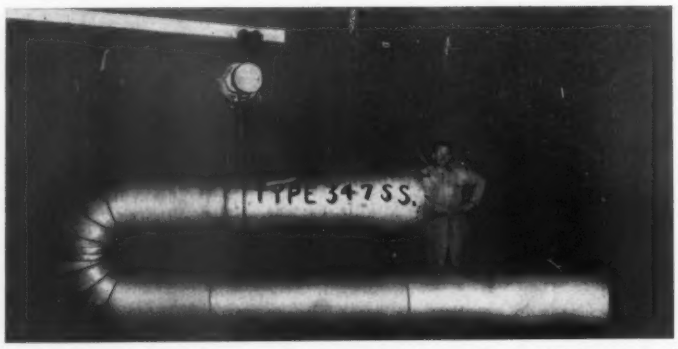
Tom G. Taylor, finance director for the proposed Idaho-Montana Pulp & Paper Co., which has groundwood, kraft pulp and news operations contemplated at Polson, Mont., advises **PULP & PAPER** that the registration statement of the company, which has been pending before the Securities Exchange Commission, Washington, D. C., has now become effective.

"This means that we are now able to proceed with our financing and to offer for sale the common stock of the corporation in any state in the U. S., he said, "after first registering the stock and receiving a sales permit." Heretofore, the company was unable to sell securities outside Montana.

Mr. Taylor said L. A. DeGuere, Wisconsin pulp mill engineer, is still the engineer for this project.

Nekoosa-Edwards Marks 25th Year of Forestry

Nekoosa-Edwards Paper Co., Port Edwards, Wis., held a Field Day and banquet Oct. 4, commemorating its 25th year in industrial forestry practices. John E. Alexander, president, Wisconsin Gov. Oscar Rennebohm, Charles F. Smith, Wausau, state convention chairman, E. W. Tinker, executive secretary, American Pulp & Paper Assn., and D. C. Everest, president of Marathon Corp., were speakers.



20" O.D. x 3/16" Wall Type 347 Stainless Steel Fabrication for Paper Mill Installation

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INDUSTRIAL PIPING, INC., PREFABRICATION

The Process Piping System in the New Addition to Sonoco Products Company Plant at Hartsville, S. C., is a typical Industrial Piping, Inc., installation. See page 61.

A Staff of Engineers with a Background of Years of Experience and a Modern Prefabrication Plant with the "KNOW HOW" in the Stainless and Alloy Field are a GUARANTEE of SERVICE in a minimum of TIME with a MAXIMUM of EFFICIENCY and ECONOMY.

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Today, more than ever, intimate knowledge of market conditions is of great importance. Through our nation-wide and worldwide supply sources and outlets, we are in close and constant touch with the market. This enables us to give constructive assistance to mill executives in buying, selling, and exporting pulp and paper.

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HOME OF HERCULES RESEARCH

A Visit to 700-Acre Experiment Station

AN AERIAL VIEW OF HERCULES POWDER CO. EXPERIMENT STATION AT WILMINGTON, DEL.

"I lay this cornerstone with the thought that in the pleasant surroundings of these woods and streams Hercules men and women in the years to come may find a common rallying place where useful things can be done for the benefit of our Company and the world at large."—Russell H. Dunham.

The above words, spoken by the first president of Hercules Powder Company at the dedication of the Wilmington, Del., Experiment Station, and now preserved in a bronze plaque in the central buildings, describe the meaning of a large research organization of vital interest to the pulp and paper industry of North America.

Hercules can point to the fact that a considerable part of its annual $4,000,000 research budget is allotted to pulp and paper. But a lot of research at the Experiment Station, outside pulp and paper, turns out, eventually, to be useful to the industry.

The station is situated on a wooded 700-acre tract in one of the most beautiful sections of the Delaware Valley, near Wilmington. From one laboratory building in 1931, it has expanded to 39 buildings scattered over the rolling green hills. There are 650 men and women in the central research organization.

If you visit the Experiment Station and say to Dr. R. F. Schultz, its director, "You have a wonderful institution here," he will tell you good-naturedly that he doesn't like that word.

"We try not to be an institution," he says. "We want our research organization to be alive to practical problems of the industry and in step with what is going on in the commercial world."

The work at the station is done under close control, by highly trained workers, using modern techniques and equipment. An important point is that central research divisions, such as testing, analytical, and physics may be called on for aid in developing or evaluating the chemicals supplied by Hercules to the industry. And some laboratories not set up with paper in mind may at any time become significant to the industry.

New High Pressure Lab.

An interesting new project is the High Pressure Laboratory. There are nine bays with strongly barricaded concrete walls and ceilings in the 140-foot by 40-foot building which carries instruments and autoclaves, including small and large rocking and stirred types for high pressure work. The back of each bay has a blow-out panel of beaverboard so that, should there be equipment failure, explosion will burst out the rear and into the hillside against which the laboratory is built. New chemicals stemming from Hercules high pressure research should eventually find application in pulp and paper.

Most laboratories are staffed with teams of two to three chemists, plus non-technical help. It is impossible to enter one without finding some application, direct or indirect, to pulp and paper.

The first lab visited by **PULP & PAPER** was working on experiments with the new "cold rubber." Use of rubber in mills has been increasing, not merely on rolls, but to resist corrosion in vats and linings. The rubber industry has been transferring production from hot to "cold" rubber (41 degrees) and Hercules has worked closely with rubber companies using rosin derivatives in this research. Much of Hercules' rubber research is similar to pulp and paper research.

As the visitor goes into many of the more than 75 such laboratories at the Experiment Station, he is continually struck by this interlocking interest affecting pulp and paper. And in the 10,000-volume library are 250,000 cross-indexed cards on which may be found pulp and paper data references on patents, correspondence, drawings, extracts, periodicals, typescripts, and reprints.

Some Unusual Equipment

The electron microscope in the Physics division has equipment for magnification 125 thousand times and this has been of importance in the study of cellulose fibers. There are still comparatively few such microscopes in U. S. industry.

It is not unusual for Hercules to develop testing equipment of use to an entire industry. Notable are the Hercules photometer (for penetration tests) and the

Fire is Forest Enemy No. 1. In most years more trees are destroyed by fire than are harvested! And the pity of it all is that most fires are caused by human carelessness and ignorance of the far-reaching consequences. Nine out of ten fires can be traced to man. Careless smokers *alone* cause one out of four.

The men and management of Weyerhaeuser Timber Company are keenly alive to the necessity of protecting forest lands from fire. Since 1903 the Weyerhaeuser organization has been participating in cooperative fire protection efforts with other private forest owners and with State and Federal agencies.

Supplementing its fire protection activities, the Weyerhaeuser forestry management program also includes relentless insect and disease control throughout its extensive timber tracts and the company's eight thriving Tree Farms which are producing harvests for the future.

Furthered by this constructive forestry policy, the Pulp Division represents a reliable and continuing source of supply for consumers of bleached chemical woodpulp.

Hercules print tester which, in miniature, stimulates conditions on a modern rotary printing press. These pieces of original equipment are in the humidity controlled paper testing laboratory, which in addition has standard testing equipment.

Another example is the Hercules automatic emulsifying process for rosin size. Introduced early this year, this process is now in use in several mills.

Research facilities devoted to work of the Paper Makers Chemical Department include a pilot plant with a complete line of processing machinery. These laboratories have been of pleasant interest to visitors from mills all over the world. Equipment includes digesters, model beaters, hand papermaking equipment, dryers, and complete coating equipment. The station apparently can do about anything a paper mill lab can do.

What impresses the visitor is the intelligent and coordinated use of a large and fully integrated research program where various phases of research are brought to bear on the increasingly complicated problems of the pulp and paper industry.

History Goes Back to 1912

This alert resilience to the changing problems of industry is a reflection of Hercules' history—which is not long, but long enough. The company was organized as recently as 1912, primarily as an explosive manufacturer. Soon it found plenty to do in the first World War. And after the war Hercules branched out, forming then an industrial research department to find products through which the company could continue to employ its wartime workers. One of the aims was to discover peace uses for nitrocellulose. As the growing lacquers and plastics industries thrived, the demand for nitrocellulose increased. Interested in a raw material source of nitrocellulose, Hercules purchased Virginia Cellulose Co., Hopewell, Va., in 1926. Association with the paper industry began through rosin sales and led to purchase in 1931 of Paper Makers Chemical Corp., now Hercules Paper Makers Chemical Department.

Not all Hercules research is carried on at the Experiment Station with which this article is concerned. Research is done also at plant laboratories throughout the country.

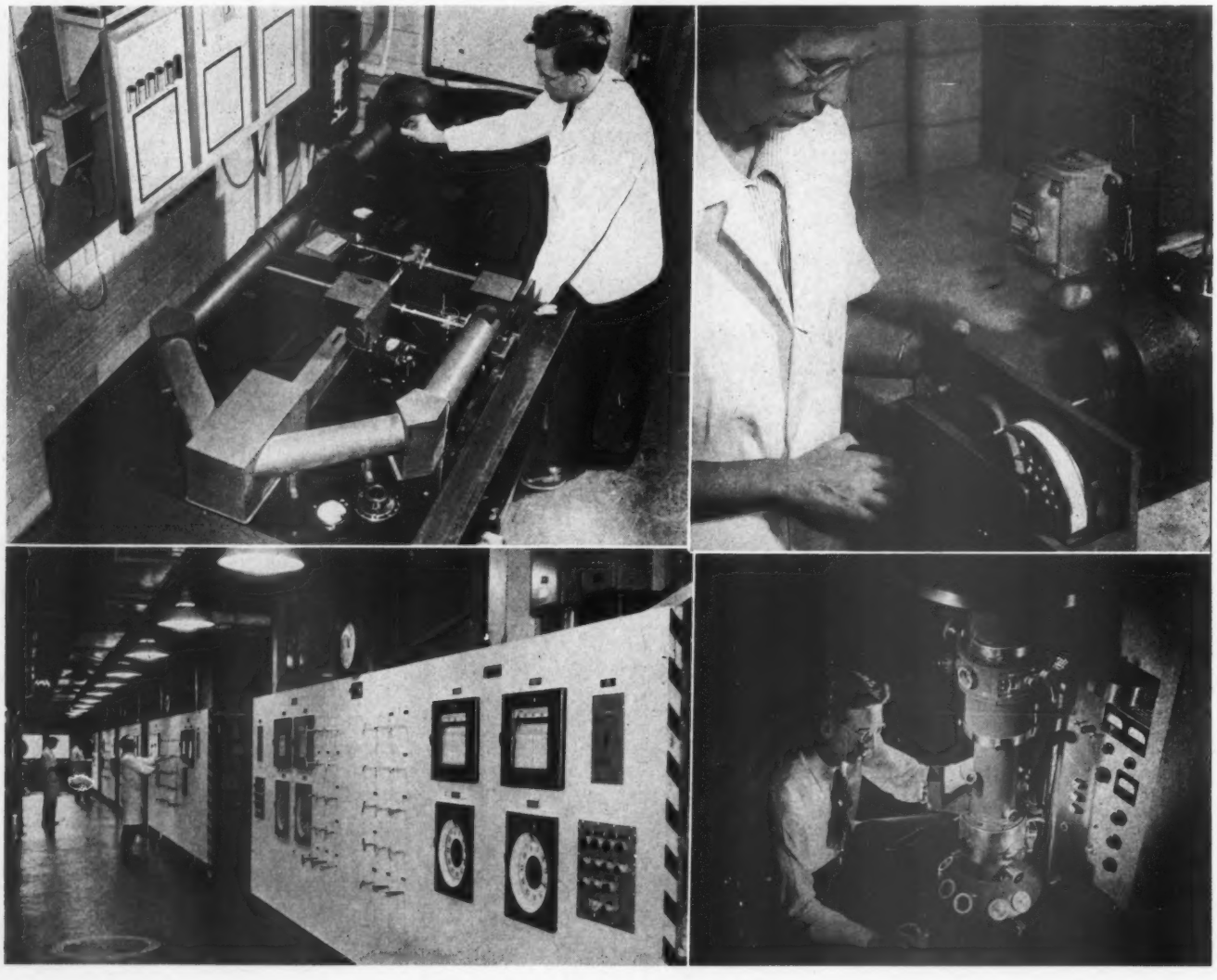
Products of Hercules Research

There is quite a list of products born in Hercules research, aside from pulp and paper, which became useful to this industry. Take Parlon, for example. This Hercules chlorinated rubber serves the paper industry in a number of ways—in moisture-resistant coatings for packaging of foods as potato chips, in printing inks, even in floor paints for mills for protection against moisture.

CMC (cellulose gum) has proved useful in printing pastes and in grease-proof paper coatings. Pigments in some printing inks are bound together by Hercules synthetic resins, which also go into the making of lacquers for paper coatings. Another Hercules chemical, terpinyl ether, is added to ink to control flow. For three decades Hercules has been a leader in production of nitrocellulose, a main component of lacquers.

Cotton-content writing papers, blotting papers, and papers for impregnation often contain Hercules bleached cotton linters, and makers of high-grade papers sometimes boil rags with Hercules terpene solvents to remove impurities.

INTERESTING EQUIPMENT IN HERCULES' Experiment Station.
Top left: General Electric recording spectrophotometer records automatically data from which the color of materials over the visible spectrum range can be quantitatively calculated.
Top right: "Pick" tester measures surface strength of printing papers in a manner simulating use conditions.
Lower left: Control panels for the new high pressure lab.
Lower right: Physics-lectron microscope.



The Story Behind KOPPERS-ELEX Performance GUARANTEE

KOPPERS-ELEX PRECIPITATORS Exceed Specified Recovery of SODA ASH!

FOR more recovery of valuable soda ash used in the sulphate pulp process, many kraft pulp manufacturers install Koppers-Elex electrostatic precipitators such as shown here.

In this case the efficiency specified and *guaranteed* was 92% with a residual not in excess of 0.20 gr./c.f. But actual results as found during a test made under *actual operating conditions* showed efficiency ranging from *94 to 97%*, with residuals from .024 to .045 gr./c.f.! These low residuals prove that *more soda ash was recovered* . . . less passed to the atmosphere!

Performance that exceeds the guarantee is typical of Koppers-Elex. Proper design, competent engineering and long range experience make Koppers-Elex the most efficient precipitators for large industrial installations that you can obtain. For superior results in the removal or recovery of material from gasses, specify Koppers-Elex . . . *designed, engineered, built, installed* and *guaranteed* by Koppers . . . *with 111 years of reputation-building integrity behind it.* Koppers Co., Inc., Koppers-Elex Precipitator Dept., 271 Scott St., Baltimore 3, Maryland.

1st with Industrial Gas Cleaning Equipment

Koppers-Elex ELECTROSTATIC PRECIPITATOR

KOPPERS

Revolutionary New Enzyme Development for Coating and Tub Sizing!

Pillsbury's PRE-MEASURED AMYLASE UNITS

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Units shown here actual size

For the First Time... Enzyme Charges in Soluble Capsules

In the preparation of coatings and tub sizings from starch, the new Pillsbury's Pre-Measured Amylase Units offer you—

Simplicity—No more weighing or measuring of enzymes. *Just count* the small number of units required and toss them into the slurry.

Efficiency—Fully protected right up to the moment they are used, these standardized enzyme charges are released at the correct point for greater efficiency.

Economy—Total cost of converting is brought down to very few cents per 100 pounds of starch in the average mill. Measuring and handling losses are eliminated, too.

Accuracy—No more errors in weighing and measuring enzymes. These stable enzyme units retain their potency indefinitely with ordinary care.

Superiority—The enzyme in Pillsbury's Pre-Measured Amylase Units has been selected because of its superior starch-converting properties. It assures end products of maximum adhesiveness and with minimum of specks.

Convenience—Easy to use and store. These units come packed in small cartons, 11¾" square and 7" deep. This compact size permits speedy parcel post delivery, minimum storage space, and enables your plant to operate on smaller inventories.

Write for Full Information—Pillsbury's technical service offers you the experience and technical know-how of men seasoned in the application of enzymes in industry. They are at your service and will cooperate with your organization in running trials without obligation.

Pillsbury's BEST XXXX INDUSTRIAL Products

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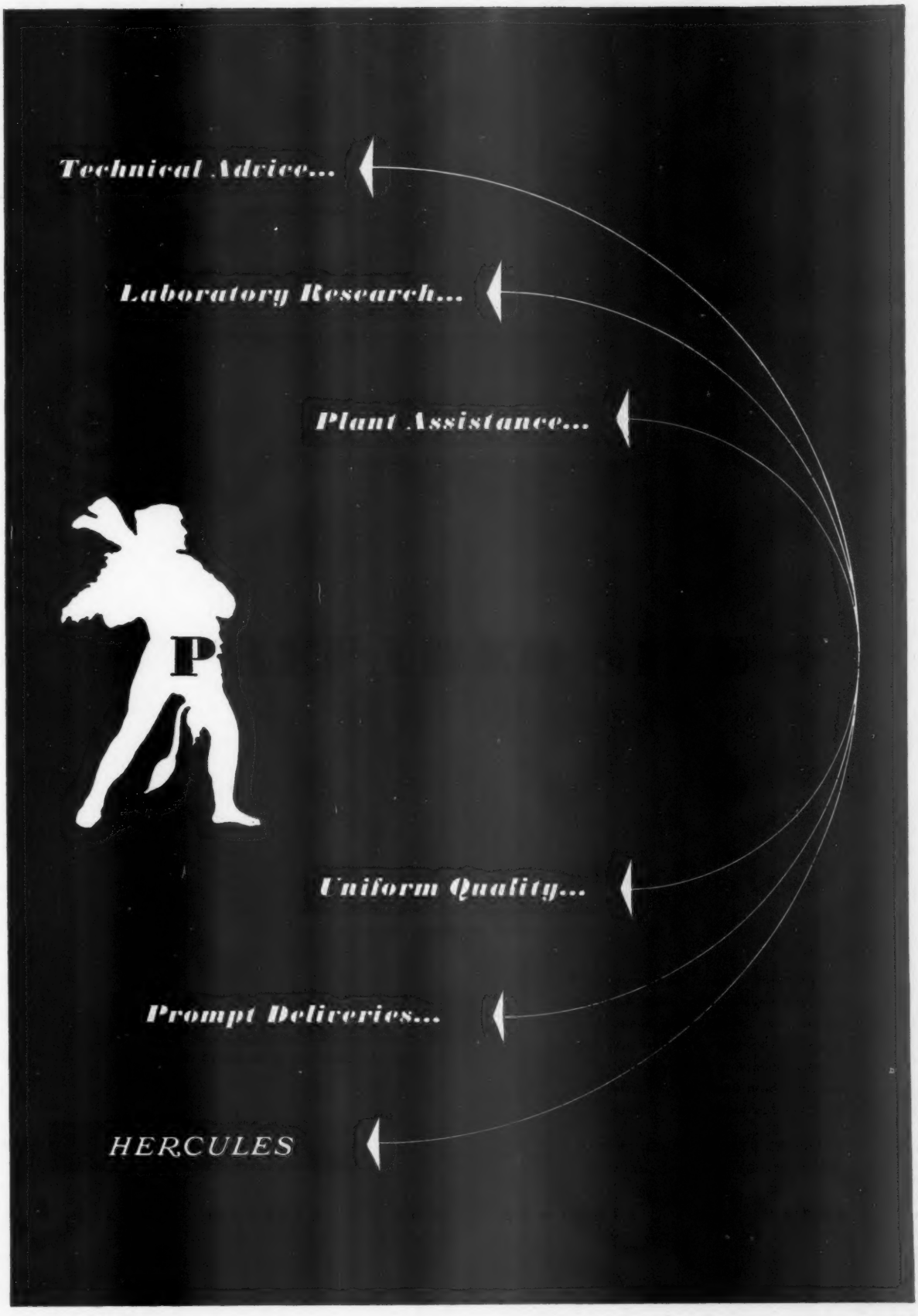
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HERCULES

THE ADIRONDACK CONFERENCE

Continued from Last Month's Report

Last month we published liberal excerpts from several of the papers and discourses presented at the Pulp and Paper Industry Conference which was held this fall at Adirondack Inn, Sacandaga, N. Y., under the sponsorship of the General Electric Co. These included talks by prominent paper industry officials who joined with GE officials in a meeting which reviewed and brought a valuable exchange of views in many problems of management and production in the pulp and paper industry.

Because of lack of space, we couldn't publish all of the abridged papers and so, on these pages we are presenting some of the other interesting papers or talks. The success of the Sacandaga meeting indicates that there will be others of this type in the ftuure, where the key management men are brought together and problems are presented in such a way that busy executives could quickly under stand and get to the meat of them.

WOOD HANDLING

By A. P. SCHNYDER,
Paper Mill Engineer, Ebasco Services Inc.

The practices of wood handling are individualistic. Some pulp mills in Sweden bring wood to the mill and store it in full tree length; the other extreme being our American practice of cutting up the tree near the stump to log sizes of 5'-3" or 4'-0" lengths for final use in the mill. Wood handling starts with the tree being felled and terminates with the chips bedded in a digester or the logs tiered in the pocket of a grinder. The multitude of operations performed within these two limits are greatly different mainly on account of climate and topography of forest and mill site.

The Northern mills in the United States and Canada from the Atlantic Coast to Midwest receive their wood mostly seasonally taking advantage of snow, frost and river flow for driving the major portion directly to mill or port where wood is reloaded into boats or railroad cars for delivery to final destination. River driven wood is mostly 8' or 16' long and is sawed to final size either at the mill or reloading point.

Western Logging

A characteristic feature of most mills are mountains of log piles particularly in the North. Western logging practice is dictated by the huge sizes of their trees. There the pulp mill industry has been developed as a supplement of the saw mills to absorb waste lumber. Long cars, for instance, are of functional design and load at times one single log measuring up to 72 inches in diameter and 40 feet in length weighing up to 25 T. Prevailent location of mills is at sea level. Logs are skidded at some suitable point into the bay, rafted and towed to the mill site. Most mills have converted the barking and chipping operation in recent years to process the log in full length as received. Barking is accomplished by water jets at 1,000 to 1200 psi pressure. This results in reduction of labor to a fraction and minimizes wood waste. Beyond this, operation is similar to that described below for the Southern mills.

Southern Practices

The Southern practice differs radically from that of the north and west. Woodlands are at low levels. Pulpwood trees are the pine species: loblolly, slash, long and short leaf. Gum and oak have come into use in late years. Trees are moderate in size, 95% being less than 17" in diameter at the butt. Harvesting is shifting from individual farmer to company-controlled group operation. Scarcity of labor during war years brought about considerable mechanization, such as power driven one-man saws, loading conveyors and caterpillar tractors. New equipment is being developed to serve in wet seasons and low swamp areas. Portable package-type diesel-generator units come in handy where such mechanical equipment can be grouped for a major wood preparing and loading operation.

At least three Southern mills process pulpwood in excess of 2,000 cords per day, or 700,000 cords per year. The largest northern newsprint mill, by comparison, requires 1,000 cords daily or 300,000 cords per year. In recent years the prolonged wet seasons in the South handicapped pulpwood production and delivery, causing shut-downs for lack of wood. Two major improvements are in sight: (1) hard surfacing of rural roads, and (2) development of machinery for harvesting wood during wet weather and in swamp land, which should improve the task of keeping the mill in production with a limited inventory of two weeks supply. Wood deteriorates progressively in storage.

Southern wood is at a disadvantage in comparison to river driven wood due to being rougher, resinous and sticky at times. The shape is more irregular and ranges much wider in size and weight. Unbarked wood sheds some bark during handling. If strings of climbing vines are present, these together with the bark particles will really handicap at times the head sprockets. If the conveyor is at ground level bark particles pile up and bury the conveyor, and overflow the pit of the follow-up conveyor. Where conveyors are on overhead trestles a sizeable pile of bark waste can grow in no time under a transfer point when slugs of bark carry around the head sprocket. Broken sticks after bark create a similar nuisance. Mechanical pulpwood handling before barking is more difficult than after barking.

Theories Disproved

It was claimed that Southern pinewood would not float. In the North sluices have been used whenever possible for conveying. The first sluice in the South —1600 feet long—was at Georgetown, S. C., in 1946. This disproved the theory about sinking tendencies of pine wood. A number of similar sluice installations have been made since in various other plants. Another faulty assumption was that bark would get water-soaked during the brief immersion. Experiments have shown that the percentage of moisture content of the bark is increased only by one or two points, provided the wood is hoisted out as it reaches the delivery end of the sluice.

The sluices eliminate necessity of straight line transportation. The length of a sluice can be several thousand feet depending on the slope of the ground. Its water velocity should not be less than four to five FS.

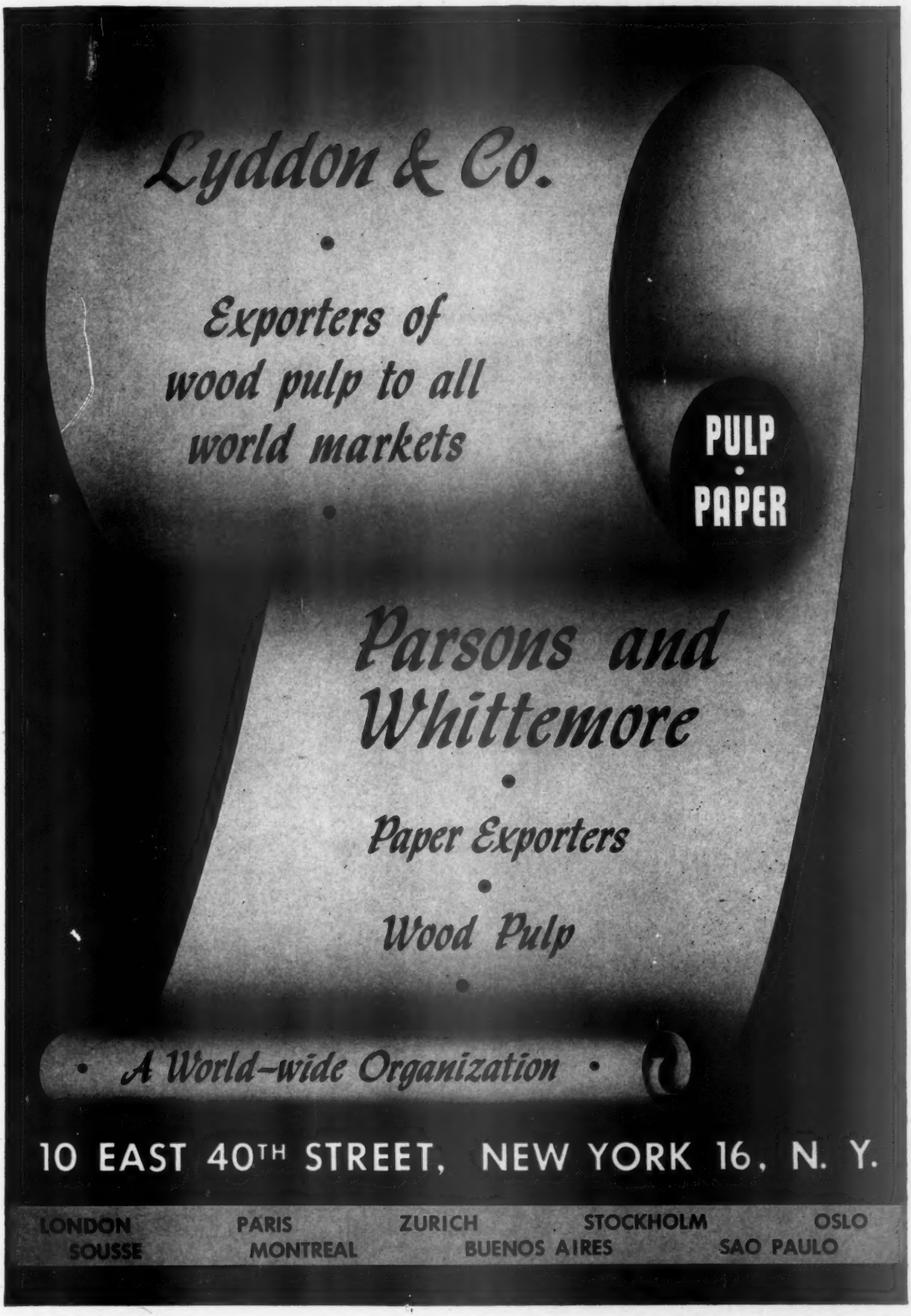
The amount of storage is debatable and depends largely upon location of the mill.

In turpentining the presence of tramp iron in the form of pieces of tin and nails will gash chipper knives, which might be preventable if effective and reliable tramp iron detector devices could be placed into the conveyor ahead of the chipper. The chipping operation requires uniformly sharp knives. Except for the occasional damage by tramp iron, knives can be kept sharp and uniform chips produced.

On account of the great number of possible interruptions that occur ahead of chipping, a sizeable storage for chips is necessary for a continuous operation of the mill. For a sizeable capacity the storage structure should be at ground level. We have found that cylindrical storage similar to grain storage practice is the most economical. This permits blending of chips from two or more bins and also permits storing several species of wood. The latter is valuable where hard wood is mixed with pine.

Chip handling belt conveyors are preferred wherever it is feasible to install them. They are dependable, require a minimum of maintenance and can be speeded up within a certain range to increase their capacity. For loading chips into digesters we use a shuttle conveyor, which can be reversed in direction. Up to ten digesters can easily be serviced by one shuttle unit.

Figure I shows a newsprint mill built in 1905 and enlarged several times since. The plant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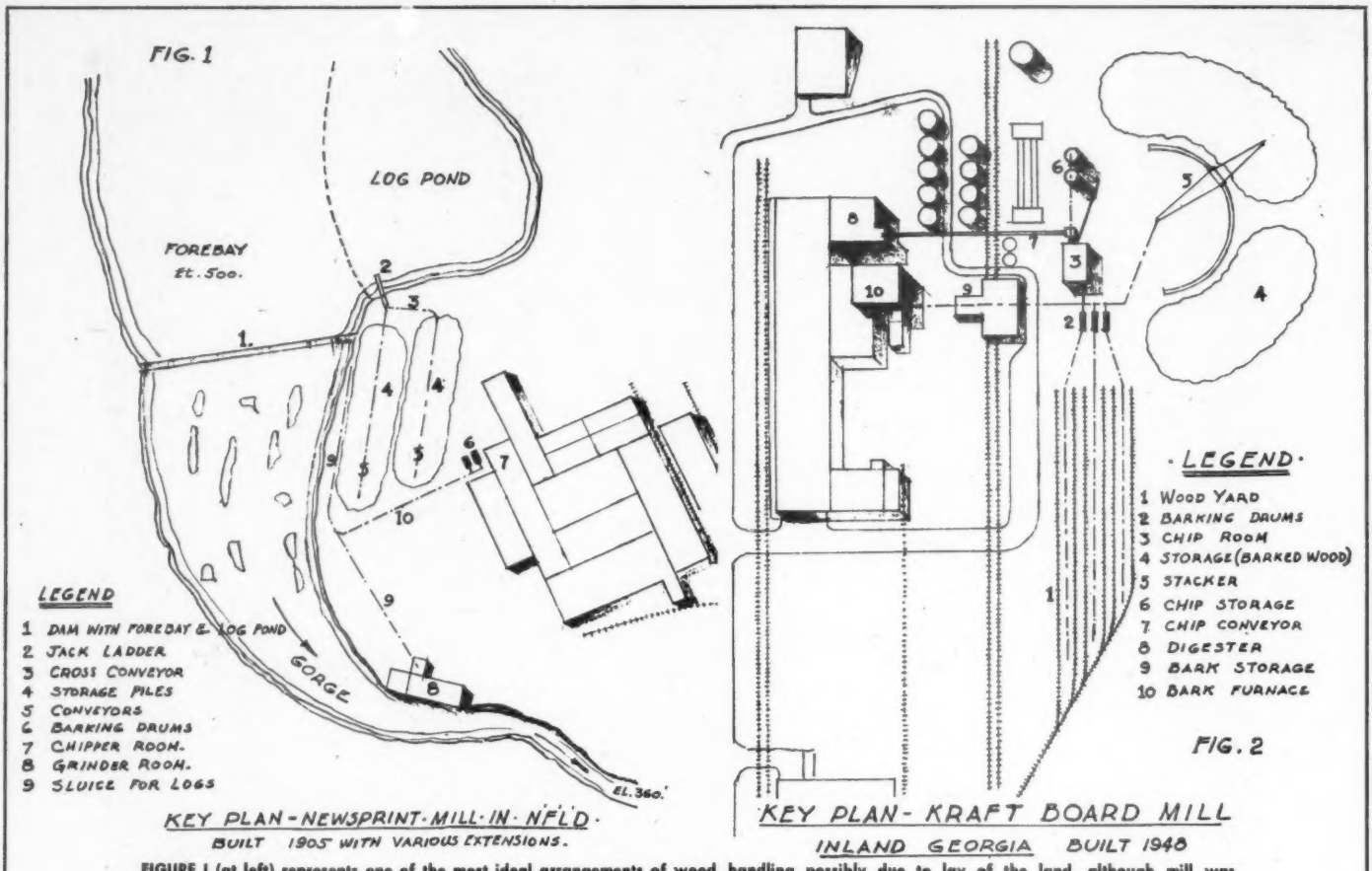


FIGURE I (at left) represents one of the most ideal arrangements of wood handling possibly due to lay of the land, although mill was built in 1905.
FIGURE II (at right) represents post-war kraft mill with facilities for wood handling and storage inland.

is shown because I consider it one of the most ideal arrangement of wood handling possible due to the lay of the land. The wood is 100% river driven and transferred to mill storage during summer months. Pond level is some 40 feet above prevailing ground level of mill site. Conveying is by water sluices, except for jack ladder and short inclined conveyors at upper end. Sluices are carried on overhead trestles for feeding into the storage piles. Wood is reclaimed and transferred into sluices at ground level for delivery to the grinder room which takes 80%; the remainder is transferred by mechanical conveyors supplying the sulfite mill.

Figure II shows a mill of post-war vintage for kraft liner board. They bark their wood before storing by means of circular stacker. Two 40-ft. diameter chip storage silos with four section hopper bottoms are used. These silos store 12-hour supply. Here screens were omitted originally but were added after start-up. Bark conveyors are of the flight and belt type.

I must apologize for neglect of Northern and Western practices in wood handling. In the North it varies so widely that one cannot fit it into a general pattern. The Western plants have tackled their problem of handling in a truly revolutionary manner and have succeeded with astounding results. Their conventional wood yard holding storage and conveying is a stretch of bay. A small tug provides the propelling power to steer logs, 20' to 25' long, to the jack ladder which is the only landbased conveyor. The jack ladder moves the logs lengthwise one at a time onto the barking stand and from this to the chipper which is located directly adjacent. The Western practice also pioneered storing chips for more than one day's requirement.

DOLLAR INTERESTS

By H. L. ERLICHER, V. P., General Electric Co.

Paper and paper products in their many forms, contribute directly to making better electrical products. We have a very important stake in your industry, one that can mean millions of dollars to us. On the other hand, our purchases of paper products for insulation, boxing, packaging, and stationery, run $10 to $15-million per year and are used in an endless variety of our products.

At the same time, the electrical industry's development of motors, control equipment, electronics, and other products has contributed considerably to paper making.

Since World War II the paper industry has made rapid strides in new developments. However, I think you will agree that prior to the last war your industry was inclined to go along with a traditional pattern. However, with the necessity for overseas shipments, with their packaging and shipping problems and the need for substitutions, the paper industry really made outstanding progress.

While I may be stargazing, I would expect that you could make many of the components of radio or television equipment from paper products. Coated papers, impregnated papers, laminated papers, and treated papers vigorously developed and applied would provide startling possibilities. From the range of materials which you could develop and market, I believe you could almost build an entire building.

We believe that an important part of the millions of dollars annually spent for metal for small parts for all kinds of products could be earned by your industry and would provide more performance at lower cost for the consumer.

Although considerable progress has been made in establishing a mutual confidence between our industries, there is still much more to be done before we can feel that our job is really working. We must constantly work toward achieving better direct contacts. Some of you sell entirely through jobbers, and I think that jobbers fulfill a very useful purpose and do a good job in selling; they are good business men. But when I say that we need more direct contacts, I mean that we could do much more than we are doing if we had a closer contact with your technical people who have the "know how" that is required to supplement the work of your jobbers. We need your technical men to come in and learn what our requirements and our problems are, so that you will be in a better position to recommend or develop products to meet our needs.

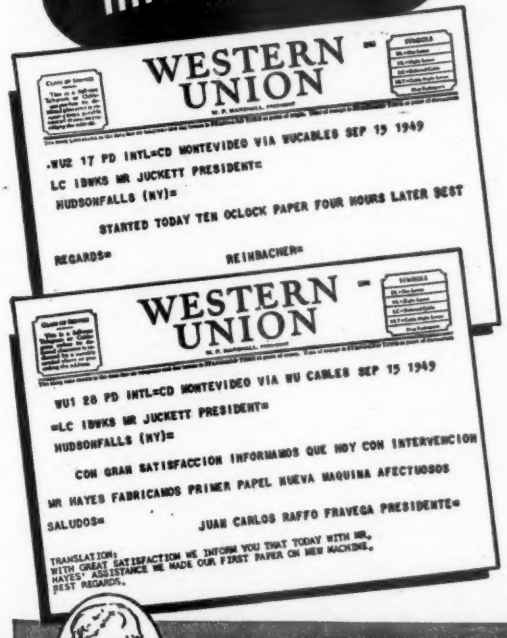
People from the steel, aluminum and glass industries study our problems in this way and in many cases have given us a better product, at a better cost, and also increasing their business. I could go on citing many cases where substitutions have been made and how, many more materials have come to our attention as substitutes because of aggressive representatives, who were completely familiar with our

(Continued on page 82)

Sandy Hill Establishes a New Record in the South American Paper Industry

Paper delivered 4 hours after start of complete new mill installation!

Plant of Fabrica Nacional de Papel in Montevideo, Uruguay. An additional machine (Number three) with process layout and equipment was supplied by The Sandy Hill Iron & Brass Works.



WESTERN UNION

.WU2 17 PD INTL=CD MONTEVIDEO VIA WUCABLES SEP 15 1949

LC IBWKS MR JUCKETT PRESIDENT=
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STARTED TODAY TEN OCLOCK PAPER FOUR HOURS LATER BEST

REGARDS= REINBACHER=

WESTERN UNION

WU1 28 PD INTL=CD MONTEVIDEO VIA WU CABLES SEP 15 1949

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CON GRAN SATISFACCION INFORMAMOS QUE HOY CON INTERVENCION MR HAYES FABRICAMOS PRIMER PAPEL NUEVA MAQUINA AFECTUOSOS SALUDOS= JUAN CARLOS RAFFO FRAVEGA PRESIDENTE=

TRANSLATION:
WITH GREAT SATISFACTION WE INFORM YOU THAT TODAY WITH MR. HAYES' ASSISTANCE WE MADE OUR FIRST PAPER ON NEW MACHINE.
BEST REGARDS.

FNP
EL SAUCE

Destined to be one of the world's largest producers of fine paper from bleached straw, the Fabrica Nacional de Papel mill has started operation of a new modern unit at Montevideo, Uruguay, with a record breaking accomplishment! A starting time of four hours is very nearly record after small changes in a paper mill, and is probably an all-time record for a completely new mill installation.

In addition to the design and layout of the paper machine, Sandy Hill engineers made complete plans for the basement, for the auxiliaries and for all phases of the mill piping system. The material shipped from Sandy Hill and its suppliers and loaded onto ships in New York harbor would have filled 40 freight cars.

Sandy Hill equipment used in this installation include a Sandy Hill-Bertrams Flow Control System, Bertrams Shake, Sandy Hill-Spencer Electrical Dandy Roll Drive, Sandy Hill Open Side Calender Stacks, Pope type Constant Speed Reel, Selective Drive and Sandy Hill-Scofield Felt Conditioning equipment.

The starting of this modern, highly efficient equipment for manufacturing straw into fine paper marks a significant milestone in the further rapid development of the paper industry in South America and another triumph for Sandy Hill paper mill engineering.

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Hudson Falls, N. Y.

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Dandy Roll Drives
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- ☐ A New Method of Pitch Control in Newsprint Manufacture—Horace Freeman, Technical Director, Consolidated Paper Corp., Ltd., Three Rivers, Quebec (Canadian Pulp and Paper Assn. paper, 3 pages)
- ☐ Experiences with Sodium Aluminate in Papermaking—Paul E. Barr (Shibley Contest paper, 4 pages)
- ☐ Experiences in Slime Control in Paper Mills—J. A. Holmes, National Aluminate Corporation (TAPPI paper, 7 pages)
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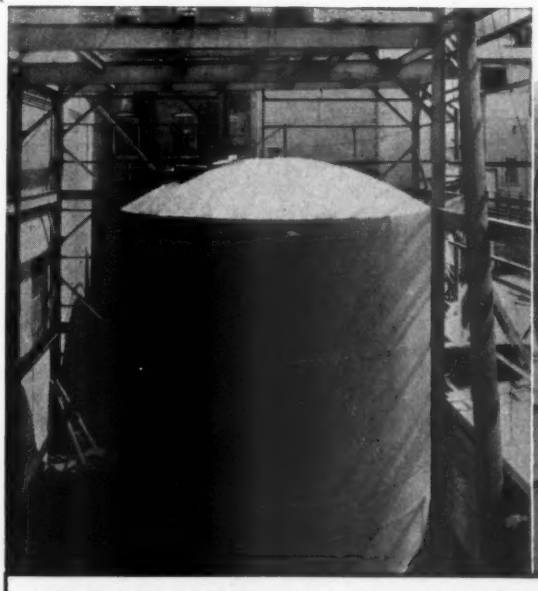
FROM MIDGETS TO GIANTS range the size of pressure vessels and welded structures manufactured in A. O. Smith Vessel plants. To the left is part of an order for 2 ft. dia. x 80 ft. long storage tanks. Below are four huge lined coke drums, 16 ft. dia. by 91 ft., being manufactured simultaneously.

FORERUNNER OF THE FUTURE — Alloy-lined steel acid-storage tanks, like the one shown below, manufactured by A. O. Smith for the paper industry, are replacing existing wooden tanks, which have a limited life. A. O. Smith manufactured the first alloy-lined steel acid-storage tank ever made.

A. O. SMITH IS A LEADER in manufacturing plain carbon steel and corrosion-resistant pressure vessels. This A. O. Smith Vacuum Column, partially lined with type 405 stainless steel, combines extensive knowledge of both types of manufacture.



NEW BULLETINS: Write the nearest A. O. Smith office listed above for these new Bulletins: V-44—Field Assembly of Pressure Vessels; V-46—SMITHway Vessels, Alloy, Alloy-Lined, Clad, and Glass-Lined.

needs and who knew their own products so completely that they immediately determined new applications for us to consider.

I do not say it critically, but I would like to point out one particular problem with which we have been confronted, especially during those times when we have had a seller's market. That problem is not being able to get specialty papers, which are more difficult to manufacture, and which possibly carry a smaller profit margin than some other type papers which can be turned out in large quantities and are more profitable to you. A situation such as this makes it difficult for us to make progress, and I urge you to give this matter serious thought.

Can We Plan Atomic Power?

By HARRY A. WINNE

V. P., General Electric Co.

"Should this new and fascinating subject alter our vision of the future paper industry?" I think the answer depends on what we mean by future. If we are thinking of a period on the order of the next 20 years, in my judgment the answer is "No." Beyond that time, it is "Maybe."

So, when—and if—economical atomic power cames from around the several corners behind which it *may* be lurking, you people are probably not going to get rid of your steam turbines. From the steam lines on to the electrical distribution system, the atomic power plant will be just like a coal-burning plant. But what we might term the "boiler plant" won't look like anything to which you are now accustomed.

The heart of the plant of course will be the "atomic pile," or to be correct technically, the "nuclear reactor." Now these reactors may have widely varying designs and forms. The atomic bomb is one form of reactor, but one we do not expect to use industrially because the only control we can exercise on it is the time of initiation of the reaction, and abviously it is not shielded to protect surrounding personnel.

The huge "piles" as Hanford represent another form. These reactors are under perfect control at all times. While the large quantity of heat they generate is not used, because their main purpose is the production of plutonium, this heat output is adjusted and controlled by the operators just about as simply as in a modern boiler plant, and if anything more rapidly.

I shall not go into a lot of technical detail as to the construction of the reactor core. Suffice it to say that the active material will be either U-235 or plutonium, or possibly the artificial element, U-233. In the Hanford piles the U-235 is in the form of natural uranium containing 139 parts of U-238 and 1 part U-235. Cylindrical slugs of this material are placed in tubes in a huge cube of graphite, which acts as a "moderator" to slow down the wandering neutrons so they will have a better chance of hitting the U-235 atoms and causing them to split and give up energy. Water flowing through the tubes carries away the heat. Control is obtained by adjusting the positions of control rods sticking into the pile. These rods absorb neutrons and so slow down the reaction.

The power pile of the future may not use graphite, and may be much smaller physically. One of the limitations to minimum size is our ability to take the heat away. We do not expect our initial experimental power plant to be economical. It is an experimental developmental unit. In constructing and operating it, we shall learn a great deal. There are many technical problems to be overcome.

Presumably following the successful operation of this first unit, a larger and more efficient plant will be built. That will pose many new technical problems. And so it will go, through the years and decades of development that are necessarily involved in bringing a new source of energy into commercial use.

Meanwhile we should be getting more light on the economics of atomic energy, something about which we know little today. We can say that there is very good reason to believe that the first cost of an atomic power plant will be considerably higher than that of a coal or oil-fired plant. Small plants of, say, less than around 100,000 kw will probably not be economical. This will depend somewhat on how much chemical processing of the partly consumed fuel is required. The state of the military demand for atomic fuel for weapons use may have a major effect on atomic power economy.

So, if you ask me whether atomic fuel will ultimately compete with coal and oil, I don't know, but I think there is good chance that it may, several decades hence. But don't look for free power. Remember, this is only a new fuel, and the cost of fuel accounts for only about 20% to 25% of the total price paid by all consumers for fuel-generated central station power today.

THE PAPER MILL MEN'S CLUB HI-JINKS, top social occasion among paper and twine sales executives and wholesalers in Southern California, was held on Sept. 30 at Oakmont Country Club, Glendale, Calif. Plans were perfected at this meeting (left to right)—Fred Ward, Powell River Sales, door prizes chairman; G. N. Madigan, past President of the club; Lou Levine, Sterling Products, softball; Roland Wolf, Graham Paper, Secretary; Jerry Thiem, past President; C. J. Warren, Paper Container, General Chairman; Carter Flynn, finances; Jack Leiser, Pioneer Wrapper, President; Merle Paup, Comfort Paper, Entertainment Chairman, and Irving Damon, Northern Paper Mills, Vice-President, but out of the picture, is L. A. Gardiner, Nekoosa-Edwards, Treasurer.

Hi-Jinks Is Held By 400 in Glendale, Calif.

The 15th Annual Hi-Jinks of Paper Mill Men's Club was attended by 400 at Oakmont Country Club, Glendale, Calif., Sept. 30, when mill men played hosts to the wholesale paper and twine industry. Sports, a dinner and floor show were the events, C. J. Warren, Paper Container Mfg. Corp.; Jack Leiser, president of the PMMC (Pioneer Wrapper Co.), and A. C. Ames for the guests, were speakers.

The committee follows: C. J. Warren, Paper Container Mfg. Corp., general chairman; A. C. Flinn, finance; Merle M. Paup, Comfort Paper Co., entertainment; Jack L. Perrin, golf; Frederick R. Ward, Powell River Sales Co., door prizes; J. C. Fischer, Sherman Paper Products Corp., program; Neil B. Sinclair, reservations; Lou Levine, Sterling Products, Inc., soft ball; Fred R. Schroeder, Sealright Pacific, Ltd., official greeter.

C. Stewart Lee of Pusey & Jones, Dies

C. Stewart Lee, 76, director and retired vice president of The Pusey & Jones Corp., Wilmington, Del., died Oct. 4 following a heart attack at his home.

Mr. Lee retired in Jan., 1948, after 40 years with Pusey & Jones, but continued as a director. He began his career in sales and was general manager of the company during World War I. Born in Baltimore, Mr. Lee was graduated from Loyola College. He visited virtually every important paper mill in the U. S. and Canada, and traveled extensively to South American and European mills.

Ohio Meeting Plans

Arthur Thurn of Champion Paper & Fibre Co., chairman of the Ohio technical section, announces this program of meetings and subjects of discussion for 1949-50 (all at Manchester Hotel, Middletown, except Nov. 8):

Tues., Nov. 8—At Dayton, O. Converting. Tour of McCall's printing plant.

Thurs., Dec. 8—Stream Pollution.

Tues., Jan. 10—Dr. Harry F. Lewis on "Chemical Pulps."

Thurs., Feb. 9—Engineering.

Tues., Mar. 14—Testing pulps.

Thurs., Apr. 13—Refining.

Thurs., May 11—Election meeting.

H. A. Smith of The Mead Corp., Chillicothe, O., is program chairman.

Frank Monohan, Veteran Supt., Dies in Retirement

Word reached friends only recently that Frank W. Monohan, 67, for ten years paper mill superintendent at St. Helens Pulp & Paper Co., St. Helens, Ore., died last May while living in semi-retirement in the little town of North Powder, Ore. He was carrying on a gravel business there. His brother is Elmer Monohan, Box 265, North Powder.

Mr. Monohan was honored as a life member of the superintendents association and was in the industry over 50 years, being distinguished for starting up and operating the first paper machine to run at 1,000 f.p.m. at Fletcher Paper Co., Alpena, Mich. Before going to St. Helens, he was with Southern Advance Bag Co., Hodge, La.; before that with Bagley & Sewall Co., Mosinee Paper Co., Mosinee, Wis., Wausau Paper Mills, Brokaw, Wis.

SOUNDVIEW

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SOUNDVIEW PULP COMPANY
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THE DULUTH MEETING

STAINLESS STEEL VS. CORROSION

Corrosion in digesters and the use of spot-welded stainless steel linings, and also the operations of new Minnesota and Ontario bleach plants were subjects that occupied 160 mill and equipment men at the fall meeting of the Northwestern Superintendents division in Hotel Duluth, Duluth, Minn., Oct. 4 and 5.

The group elected the following officers: Larry Sabatke, Marathon Corp., Rothschild, Wis., chairman; Eugene Ingalls, Wausau Paper Mills Co., Brokaw, Wis., secretary-treasurer; Mace Harris, The Northwest Paper Co., Cloquet, Minn., first vice chairman; Paul H. West, Thilmany Pulp & Paper Co., Kaukauna, Wis., second vice chairman. Outgoing chairman is Frank Kreiling of Thilmany.

Presenting an outline of groundwood bleaching as done at the Blandin Paper Co. at Grand Rapids, Minn., was C. A. Richardson, chief chemist. E. L. Crowley, The Northwest Paper Co., Cloquet, Minn., bleaching plant superintendent, led a discussion on kraft bleaching as done at his and at other plants.

Mr. Richardson reported that the Blandin plant, first designed for 60 tons air-dry per day, has with a few minor changes, such as speeding up the stock meter and discharge screws, been augmented to 90 tons average daily capacity and 115 tons maximum.

Operated virtually from a single central panel located near the thickener, the plant has a spill-over safeguard in having motor switches tied together so that if a piece of machinery kicks out, feeding facilities down the line also are stopped.

DONALD R. SEELY (left) has been appointed Assistant General Sales Manager of Restigouche Company, Ltd., and the pulp division of the Fraser Companies, Ltd., according to announcement by Fraser Paper, Ltd., 420 Lexington Ave., New York City. Mr. Seely was formerly Assistant to President and General Mgr., Aubree Crabtree, handling many important affairs for the company. Mr. Seely's offices are in Edmunston, N. B., where a big Fraser mill is located, another being just across the river at Madawaska, Me. This picture was taken by PULP & PAPER recently in Edmunston. He was born in Woodstock, N. B., and started his career in the company accounting department.

WILLIAM S. SNYDER (right) has been appointed General Manager of International Paper Co.'s Container Division. Mr. Snyder's experience dates back to 1928, with Fort Wayne Corrugated Paper Co. and for 14 years with International's Container Division and its predecessor. He has been General Sales Manager for five years, and prior to that was in charge of Kansas City and Chicago plants. He will continue as General Sales Manager.

LEVI LEROUX, retired Mill Mgr., The Northwest Paper Co., Brainerd, Minn., honored by Life Membership in Supts. Assn., with two other Lake Staters.

While maximum brightness can be reached in one hour at about 16% density and 110 F with a fairly alkaline liquor, no significant loss of brightness is noted when held over on week-ends. When the Blandin dam broke in 1948, some stock in the tower three weeks retained over half its brightness increase due to bleaching, the speaker reported.

Numerous problems and phases of the kraft process as used in recently installed bleach units (in the last 2½ years) in Terrace Bay and Marathon, Canada; International Falls, Minn., and Cloquet, Minn., were discussed in the round table. Mr. Crowley, the discussion leader, said the new kraft bleach plant built by his firm at Cloquet, with a 100-ton daily capacity, likely will be "ample" for some time.

A. O. Smith Work is Discussed

Scott Henry, assistant director of metallurgical research, A. O. Smith Corp., Milwaukee, fabricators of pressure vessels, took the place of Mr. West as leader of a discussion on digester corrosion.

Mr. Henry said his company has had success against corrosion with spot-welded stainless steel linings about one-eighth inch thick in vessels of lower grade metal. Discussion indicated some encouraging results may be forthcoming in experiments with cathodes to counter the galvanic action occurring in the pulping process with various corrosive liquors used. This anti-corrosive technique has been successful against pipe-line corrosion, one representative pointed out.

Mr. Henry said some success has been noted in the process of roughing vessel surfaces with a nickel electrode and then applying an alloy spray to the roughened surface.

Other discussions: "Bark Disposal," Harold Blair, engineer, The Northwest Paper Co., Cloquet; "Lycoid Gums for Paper Making," J. P. Strasser, vice president, Stein-Hall Co., New York City; "Hercules Automatic Emulsification Process," Howard H. Parker, sales representative, Hercules Powder Co.; "Protective Coatings for Paper Mill Use," H. W. Foelsch, Stalpic Coating Co., Chicago.

The division voted life memberships to William K. McNair, for 50 years with The Northwest Paper Co. mills; Levi Le Roux, retired manager of The Northwest Paper Co., Brainerd, Minn.; and R. W. Haddock, superintendent, Escanaba Paper Co., Escanaba, Mich. It also voted an honorary membership to Otto Kress, retired technical director, Institute of Paper Chemistry, Appleton, Wis.

Mr. McNair is an uncle of C. I. McNair, Jr., vice president and manager of the Cloquet Mill of Northwest, and Mr. LeRoux is father of Russell LeRoux, Weyerhaeuser Everett mill manager, and another son is with Northwest's engineering.

Dr. Murdock and Wife Injured in Auto Accident

Dr. Harold R. Murdock and his wife, Bonnie, were severely injured in an automobile accident while driving southward on the Blue Ridge Parkway near Mount Airy, N. C. Mrs. Murdock suffered a broken nose and forehead laceration and Dr. Murdock, four broken ribs. For two days they were hospitalized at Mount Airy, then moved by ambulance and plane to Atlanta, Ga., where Mrs. Murdock required further treatment, but both are recovering nicely.

Dr. Murdock, who recently ended three years' service as head of the Japanese pulp and paper industry for General MacArthur, is presently with Robert & Co. Associates, engineering firm of Atlanta. He was returning home from Portland, Ore., where he addressed the technical convention.

Dick Temple Travels Far for Moore & White

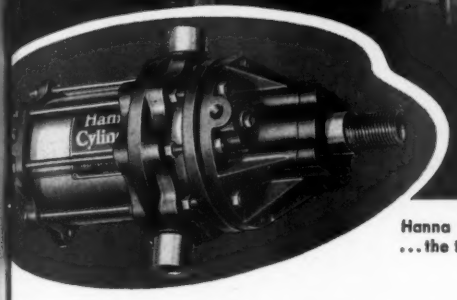
Richard U. Temple (left), who is widely known in the Southern pulp and paper industry where he has been traveling for about 12 years, has just completed his first trip to the Pacific Northwest mills in his capacity as sales manager for The Moore & White Co., Philadelphia, custom builders of paper machines. Mr. Temple oversees sales and service in the entire U. S. now and he expects to make periodic visits to the Pacific Coast.

Born in Columbia, Lancaster County, Pa., he graduated from Rutgers University in 1926 in engineering. For some years he was in contracting business and was mill superintendent at the Ruberoid paper, roofing and felt mill in Gloucester City, N. J., before joining Downingtown as Southern representative.

Hanna Cylinders

HELP CUT COSTS in the SOUNDVIEW PULP MILL

Another... OF THE 1001 APPLICATIONS OF HANNA CYLINDER POWER!



Hanna Low Pressure Cylinder 17 MCC
...the type used at Soundview Pulp Co.

Photo shows two of the fourteen Hanna Low Pressure Hydraulic Cylinders selected to operate vent stack butterfly valves in a gigantic sulfur and heat recovery system for blow pit gases. This installation, largest of its kind, was recently made in the sulfite pulp mill of the Soundview Pulp Company, Everett, Washington, largest sulfite mill in the world.

Hanna Cylinders, powerful and dependable, play an important part in this system which recovers about 950 lbs. of steam and 40 lbs. of sulfur per ton of bleached pulp for huge savings.

...Providing Dependable, Economical Power

Engineers throughout industry continue to take advantage of the features of Hanna Cylinders for smooth, efficient operation of all types of machines and equipment. More and more cylinders are being used in pulp and paper mills to achieve faster, simpler machine actuation and control for increased production.

There is a Hanna Cylinder for nearly every application — for nearly every mounting requirement — for working pressures up to 1500 p.s.i. — for nearly every push, pull, lift, press, clamp or control problem you may have.

Send for these Engineering Aids

CATALOGS

Hanna Catalog 233 gives full information on Hanna Hydraulic Cylinders. Catalog 236 shows Hanna Low Pressure Cylinders.

CALCULATORS

Two calculators, one on Pneumatics and the other on Hydraulics, give facts and figures on cylinder selection and other helpful information. Send for yours today.

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NEW MILL'S OPEN HOUSE
Displays in All Departments

GREETERS AND KIDS at Crown Zellerbach Open House, Port Angeles, Wash. Top, l. to r.: DON OSBORNE, Asst. Personnel Supervisor; JIM WENGER, Tech. Director; JOY BAILEY, of Office staff, and TOM HARGREAVES, Asst. Res. Mgr. Next is GLEN H. LOFTUS, Asst. Office Mgr., with some of hundreds of school kids who took home gifts of paper hats, facial tissue, pads and pencils.

Below, at left, LEWIS SPICER, Purchasing Agent, holding the mechanical counter by which he counted hundreds of guests. In center view with kids is FRANK ARCHER, Finishing Room. At lower right: HERB WILLISON, Forester, who prepared one of best exhibits, and PAUL ROENING, of Tech. Dept., who helped paint forestry mural.

A remarkable attendance of 2,736 persons, including about 1,000 school children, streamed through the newsprint mill of Crown Zellerbach Corp. at Port Angeles, Wash., during "open house" Sept. 28. The event clearly demonstrated that this company is becoming much more experienced and skillful in this very important public relations activity.

Benefiting from past performance in several Crown mills, the Port Angeles mill staff guided visitors through wood room, groundwood and sulfite mills, machine and finishing rooms in an event that ran off very smoothly and efficiently.

Unusual at Port Angeles was the considerable number of exhibits of especially high quality. Every department had one. The way the tour route was marked off was very efficient, too, with heavy yellow arrows on the floor with solid yellow lines on each side of the arrows marking out the "trail" through the mill.

Tom Hargreaves, assistant resident manager, who came to the mill as a boy from England and Canada and started working there 28 years ago while still in his 'teens, was the No. 1 greeter and host. Malcolm Otis, resident manager, was detained in Portland, Ore., by the industry wage conference, and so was Merle Cashman, personnel supervisor. Don Osborne, temporarily transferred to Port Angeles as assistant personnel supervisor, was in charge of arrangements.

Col. John Farley, from the Seattle office; Lewis Spicer, purchasing agent; Jim Wenger, technical director; H. Leslie Day, office manager; Glen H. Loftus, assistant office manager, and others of the staff assisted in various phases of the open house.

General opinion was that the outstanding exhibit was the forestry exhibit—the last on the tour—arranged by Herb Willison, forester. A fine forest mural behind it was painted by Bob Evanger, mill plainter, and Paul Roening, technical laboratory. A miniature tree nursery, various species of trees in pots; examples of best ways to plant trees, etc., were features.

A colorful display was in the beater department where bottles of color inks and corresponding colored papers were shown. The technical lab, showing many of its instruments, had a fine display.

The engineering staff, under L. E. Warwick, and superintendents provided a great deal of detailed information so that the signs and exhibits throughout were especially informative as to processes and equipment. For instance, in the machine room a Fourdrinier wire for the No. 3—236-in. machine was displayed on the saddle used to mount it on the couch roll and a sign explained it was "60 x 48 mesh, cost $2,000 and has average life of two weeks." Similarly a $475 first felt was shown, and signs explained maximum speed of the machine was 1,390 ft. Three news machines at Port Angeles have total capacity of 420 tons a day.

A sense of humor was revealed in the engineering department exhibit where an empty pint with a familiar label was shown as "lubricating oil for the engineering staff" and a giant-size typewriter oil can for a local prolific writer was also displayed.

Boxes of Crown Zellerbach's facial tissue from the Camas mill, paper pads, 2-ft. pencils, and paper caps were given to visitors as a farewell present.

Altick Moves West For Fibreboard Position

B. P. Altick, present manager of Federal Container Co., Philadelphia subsidiary of Fibreboard Products, Inc., will move to the Pacific Coast Dec. 1 to become assistant to T. N. Bland, vice president and general manager of Fibreboard.

West Linn Pins

Frank Fitzko and Albert Fromong received top service pins at West Linn, Ore., Crown Zellerbach Corp. service pin dinner recently, for 40 years service with the organization. Pins were awarded to 99 men and women employes.

Richard A. McDonald, executive vice president of Crown Zellerbach, presented pins to recipients. P. T. Sinclair, West Linn resident manager, opened the dinner meeting, and William D. Welsh, of C-Z industrial and public relations, presided as toastmaster.

FRANK A. DRUMB, resident manager, Crown Zellerbach Corp., Camas, Wash., vacationed in Southern California during first two weeks of October.

LEWIS SPICER, purchasing agent, Crown Zellerbach Corp., Port Angeles, was one of the original "Cub Scouts" of the U. S. This auxiliary of the Boy Scouts was originated in Port Angeles and Lewis says he still has to dodge behind telephone poles to escape locals pointing him out and saying: "There goes one of them." His father is *C. L. SPICER,* veteran boss machine tender at the big news mill. Lewis was born in Camas just a few months before his father moved to Port Angeles.

BARNEY MULLANEY, personnel and safety supervisor of the Crown Z mill at Port Townsend, was selected to represent that organization at a college recruiting conference held in Pittsburgh recently and participated in by leading industries.

JIM WENGER, technical director, Crown Zellerbach, Port Angeles, is the president of the Toastmaster's Club in that city.

E. F. WENDT, machine tender on No. 5 machine, and *CHARLES McKEVER,* lubricating engineer, both at Crown Zellerbach Corp., Camas, Wash., retired Oct. 1. Mr. Wendt has 45 years of service at this mill, and Mr. McKever, 50 years.

ERNIE E. KERTZ, of Portland, Ore., who travels for manufacturer of jordans and beating equipment, has joined the Elks of Port Angeles.

BILL LOCKE, chief steam engineer, Crown Z, Port Angeles, is now in charge of a new Coast Guard reserve unit at that important U. S. Coast defense point. He was in the C. G. in both wars; a warrant officer in the Philippines and New Guinea in the last one.

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Newest ...Brightest of the Rosin Sizes

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The ACCOBRITE** Rosin Sizes are unsurpassed for imparting high brightness value to sized papers – brightness that is retained in the paper even after aging.

ACCOBRITE Rosin Sizes are characterized by their low foaming properties. This may be reflected both as a definite savings in cost of foam killers and as an improved sheet formation – fewer foam spot complaints – fewer machine breaks.

ACCOBRITE Rosin Sizes are available in various solids concentrations and a wide range of free rosin contents.

ACCOBRITE Rosin Sizes are noted for their absolute purity and high quality. This new *improved* rosin size, with its outstanding machine performance, will please you with its excellent waterproofing, ink resistance, and general sizing results.

Consult your Cyanamid representative for full information about new ACCOBRITE Rosin Sizes.

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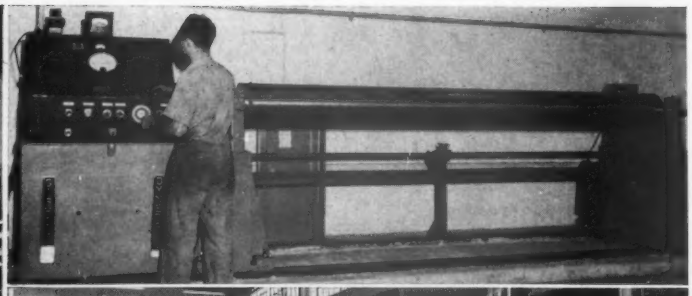

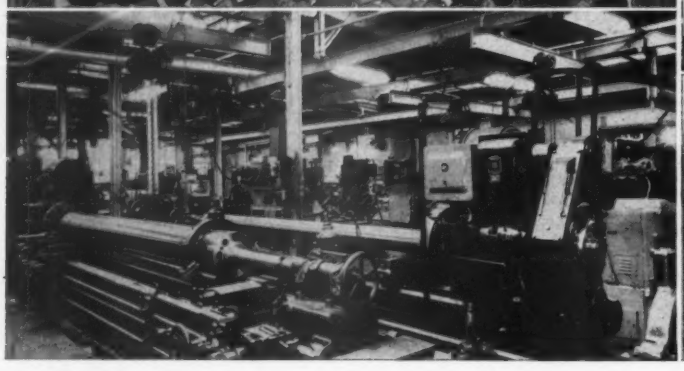

AN EXCLUSIVE PULP & PAPER PHOTOGRAPH (upper left) shows men at first national Cameron sales conference at the St. George Hotel, Brooklyn. Seated (left to right) are Tom Carter, Chief Engineer; John Venturini; Palmer J. Lathrop, President; J. S. Scheuermann, Vice President and Sales Manager; Richard Hardman; E. J. Ward. Second row (standing): Ed Tidland; Paul Chessare; R. Boree; Ralph McQuade; Harold Overacker; William Dorsey; V. F. Barber; Robert Cummings. Third row: Cliff Cox, Consultant for Cameron; Richard Scheuermann; Harold Smith, Jr.; Paul Withstandley, Advertising Manager; Warren Reed; Jack Dain and Lowell Warwick.

At upper right is one of most important new machines in Cameron's new Plant No. 2, equipment which balances Camachine rolls dynamically.

Lower two views are studies in contrasts of old and new plants. At left is a view of lathe operations in old Cameron plant before this department was moved to the new No. 2 Plant in the Williamsburg area of Brooklyn. At right is the same type of operation in the new plant. Note the roominess, modern lighting and new modern equipment. Materials handling is also modernized.

CAMERON EXPANSION
Machine Firm Opens Plant

In 1896 in the lively community known the world over as Brooklyn, N. Y., a young man by the name of J. A. Cameron opened a small machine shop and advertised he was ready to "build anything from battleships to buttonhooks." He meant it literally, for he had no idea of what he would manufacture—but he was willing ,and felt able, to try anything.

His first products were some of the earliest motion picture projectors. It was not until 1906 that he incorporated Cameron Machine Company and began to build slitters. The idea for his first slitter came to him as he watched girls in a handkerchif factory tear cloth by hand. He soon branched from textiles to paper and secured basic patents on the now-famous "Camachine" two-drum winder with top riding roll and score-cut slitting means. Over the ensuing years, the Cameron Machine Co. has specialized exclusively in the design and manufacture of a complete line of slitters, winders and rewinders for every conceivable purpose.

To provide continuing future growth, and to relieve congested manufacturing conditions in its main plant, Cameron recently set up additional manufacturing facilities in a fine new 20,000 sq. ft. plant in the Williamsburg section of Brooklyn. Here the rolls and drums which form the "spreader parts" of Camachines are manufactured under ideal operating conditions. A Cleveland overhead crane services the main monitor bay, while smaller lathes in the side bays are serviced by a Baker lift truck. New Monarch and LeBlond lathes with tracer control attachments have replaced older and less efficient equipment.

Perhaps the most spectacular innovation in Cameron's new plant is the new Gisholt Dynamic Balancing machine which makes it possible to balance rolls with far greater accuracy and at lower cost than by former "trial and error" methods. On this machine the location and amount of unbalance of rolls is quickly and accurately determined in inch pounds so that appropriate corrections can be made. Cameron has thus equipped itself to satisfy the demand for faster and faster re-winders to take care of the ever-increasing web speeds in paper mills.

To make these changes known, and to acquaint its sales and service organization with many important new design features in Cammachines, soon to be announced, Joe Scheuermann, vice president in charge of sales, called a national sales conference. At that time, Cameron's 15-man sales and service organization was briefed on new developments by company officials, such as Charlie Walmsley, in charge of operations; Tom Carter, director of engineering; Gene Ward, service manager; and Paul Withstandley, advertising manager.

At their final banquet, Bud Lathrop, new president, stated that Cameron's objective is to "continue to strive to make a better product at a lower cost; to give our customers the best possible service at all times, and to maintain and extend our leadership in the winding and re-winding field."

From the looks of things, and judging by the remarkable progress made thus far, it would seem Cameron Machine Co. is already well along the road to achievement of its goal.

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HOW
TO UTILIZE
YOUR BARK
AND MILL REFUSE
PROFITABLY!
NEW MACHINE
CONVERTS WASTE INTO PROFIT
Have you wondered how to get dollars from that soggy bark pile or useless knots and screenings?
The best answer to your problem is the new FULTON PRESS just perfected by the Fulton Iron Works Company, makers of fine processing and extraction equipment since 1852.
It (1) DE-WATERS and (2) REDUCES bark, knots and screenings, and mill waste in one operation—making your bark or wood mill refuse a more efficient fuel or more easily processed by-product—prepares your knots and screenings for redigestion or refining.
WANT PROOF? send us samples for processing
We will gladly process samples of your waste material free of charge.
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Personals

NORTHEAST

DONALD W. FRASER (left), is appointed Eastern Representative of Soundview Pulp Co., with offices at 122 E. 42nd, New York. Working in woods and mill up to position of Supt., he has had one of widest experiences in operations of any salesman. Born in Woodstock, N. B., attended Upper Canada College in Toronto. He is grandson of founder of the great Fraser organization and was with Fraser Companies 26 years.

WARREN A. CHILSON (right), former Advisor to the President of Northern Paper Mills, Green Bay, Wis., who has become Sales Mgr. of the new Curlator Corp., of 565 Blossom Road, Rochester, N. Y., makers of the new curlator machine successfully demonstrated in Price Bros.' Quebec mills in experimental work and described in April PULP & PAPER. Mr. Chilson has had 24 years in all types of mill experience including research, development and operations.

R. L. NASH, formerly with the Chicago office of the pulp division of the Weyerhaeuser Timber Co., has been transferred to the New York office of that division and is working out of the division's offices at 230 Park Avenue. Mr. and Mrs. Nash and family moved eastward in October.

J. C. FINK, formerly manager of the industry engineering department of the Westinghouse Electric Corp., Pittsburgh, has been named assistant to A. C. Monteith, vice president in charge of engineering.

A native of Sinking Spring, near Reading, Pa., Mr. Fink was graduated in 1927 from Pennsylvania State College.

Vance Edwards Opens Office

Vance Edwards, veteran sulfite superintendent at International Paper's Corinth, N. Y., mill, and a past national president of the technical association, has left that position and has announced he will do consulting work on bleaching and pulping, living in Corinth. He recently visited the Pacific Coast, where he began his career in the sulfite industry. He was born in California.

ROWLAND A. GAIL, 476 Hawthorne Ave., Yonkers, N. Y., is one of the technical representatives for Pillsbury Mills, visit in connection with the pulp mill his company is building in Chanda, Central India. The major and 160 native beaters went after a marauder and Major Hahn brought the animal down with one shot. connection with Pillsbury's Pre-Measured Amylase Units, the announcements for which appear in this issue. Mr. Gail is sales manager for this Industrial Products Div. of Pillsbury besides his coverage of the eastern territory. In the Middle West is *FRED W. SANDERS,* 1213 17th Ave. No., Minneapolis.

FRANCIS A. DENNIS has been appointed assistant general superintendent of The Diamond Match Co. pulp and paper plant at Plattsburg, N. Y., it is announced by J. O. Julson, manager of the pulp and paper division. Mr. Dennis was with Sitroux, Inc., as plant superintendent for the past year and a half. Previously he was for 25 years with Scott Paper Co., in recent years at Fort Edward, N. Y.

WILLIAM R. ADAMS, vice president in charge of several kraft operations of St. Regis Paper Co., has made five transcontinental trips within the past year between the kraft mills in upper New York and the one in Tacoma, Wash.

JOHN B. CALKIN, consulting engineer who is director of the Department of Industrial Cooperation, University of Maine, was a recent visitor to New York in connection with his independent work as well as on Maine business. He and Mrs. Calkin are now residents of Orono.

GEORGE K. McKENZIE, vice president of The Flintkote Co., New York, has three sons, all born on exactly the same day, Sept. 27, four years apart. The boys, 12, 8 and 4 years old this Sept. 27, all have the same initials—Jeff Allen, Jerome Alec and Jamison Angus.

Bob Wolf, Jr., Joins Foxboro

The Foxboro Company announces that Robert B. Wolf., Jr., has joined its staff of instrument engineers at Foxboro, Mass., as assistant to W. S. Yunker, sales manager, Pulp and Paper Division. Mr. Wolf's father, who lives in Connecticut, was former manager of the Pulp Division of Weyerhaeuser Timber Co.

Young Mr. Wolf graduated from Yale Sheffield Sceintific School, and worked at Camas, Wash., at Everett, Wash., and Chester, Pa., mills; during the war with DuPont Co. and recently he has been an engineer at San-Nap-Pak Mfg. Co., Mount Tom, Mass.

PHILIP H. HARDIE and *CLARENCE P. WILSON* have become associated with Ebasco Services, Inc., New York, as principal mechanical engineers. Mr. Hardie, a graduate of Alabama Polytechnic Institute, has had wide experience in power plant design and engineering. Mr. Wilson, a graduate of the University of Arizona, is widely-experienced in the industrial field. Recently he was in charge of design of power plants in Alaska. Prior to this, he was engaged in the design of paper mills.

EDWIN R. BUTLER has joined American Forest Products Industries, Inc., Washington, D C., as assistant managing director. Before coming to AFPI he was public relations director for the Southern Hardwood Producers, Inc., Memphis, Tenn. He graduated from the University of Minnesota in 1923.

HENDLEY BLACKMON, managing editor of "Electrical World," since 1947, has been appointed assistant manager of Engineering Association Activities for Westinghouse Electric Corp. He will be headquartered at the East Pittsburgh Works.

JOHN A. SEGUR has been appointed controller of Riegel Paper Corp., John L. Riegel, president, announces. Mr. Segur, a Phi Beta Kappa and Brown alumni, will make headquarters at the Milford, N. J., plant. Other Riegel plants are all within 10 miles.

GRANT HARRISON, sales manager for Hollingsworth and Vose, announces that *H. W. MacDOUGALL* has been transferred to the general sales office at East Walpole to take charge of the sales office at 41 Park Row, New York City.

One of the Men behind Eastwood Wires

Harry Smith

"Stops the Music"

The ceaseless pounding of a giant wire loom may be nerve-wracking to some, but to Harry Smith it is harmonious accompaniment to his life's work. Here he has just stopped his loom to change the selvage wires at start of another Fourdrinier wire.

In his 38 years of service as a weaver for Eastwood-Nealley, Harry Smith has taken millions of feet of fine strand wire and fashioned them into meshes that made many kinds of paper in the finest paper mills of the country.

EASTWOOD-NEALLEY CORPORATION • Belleville, N. J.

Eyecatching...

BASIC DYES

Du Pont Auramine Conc.
Du Pont Rhodamine 5GDN Extra
Du Pont Rhodamine 6GDN Extra
Du Pont Rhodamine B Extra
Du Pont Victoria Green Small Crystals
Du Pont Victoria Pure Blue BO
Du Pont Ethyl Violet

SELECTED ACID DYES

Du Pont Quinoline Yellow Conc.
Du Pont Orange II Conc.
Du Pont Orange RO
Du Pont Brilliant Crocein FL Extra Conc.
Pontacyl* Brilliant Blue E
Pontacyl* Violet C4BN
Pontacyl* Fast Violet VR

SELECTED PIGMENT DYES

Monastral* Fast Blue BWD
Monastral* Fast Green GWD
Halopont* Pigments
Lithosol* Pigment Types

*REG. U. S. PAT. OFF.

Du Pont Dyestuffs

DU PONT

Pulp mills of the United States and Canada in North America consume more than 30 million cords of wood each year. Perpetuating this supply is the responsibility and the prime concern of management men of the pulp and paper industry. This represents a vast investment in machinery, labor and wood. This section of PULP & PAPER is devoted to ways and means of developing more efficient methods of forest management and wood production.

LOGGING ON OLD MAN RIVER

It Is Different on the Mississippi

Nowhere in these United States is there another pulpwood operation exactly like that conducted to furnish the U. S. Gypsum Co.'s wallboard mill at Greenville, Miss., yet the factors involved, once removed from the Mississippi River, are fundamentally similar to those throughout the length and breadth of the land.

In two respects the U. S. Gypsum Co. operation are dissimilar from others: (1) there exists no fire hazard for its pulpwood supply such as takes a heavy toll in the Southern woods; and (2) Ol' Man River furnishes the broad highway for part of the pulpwood movement, and these operations are timed to his moods.

The willows upon which this wallboard plant thrives grows like weeds along the banks of the Mississippi River, and the company's operations in harvesting these quick-growing trees is limited to the space between the levees that confine the waters of the stream at time of their maximum passage. This distance between levees is an average of one to one and one-half miles, but it may in actuality be as much as five or six miles. The area involved in the operations is termed the "batture" or river bank outside of the levee, and also includes islands that periodically vary in size and location.

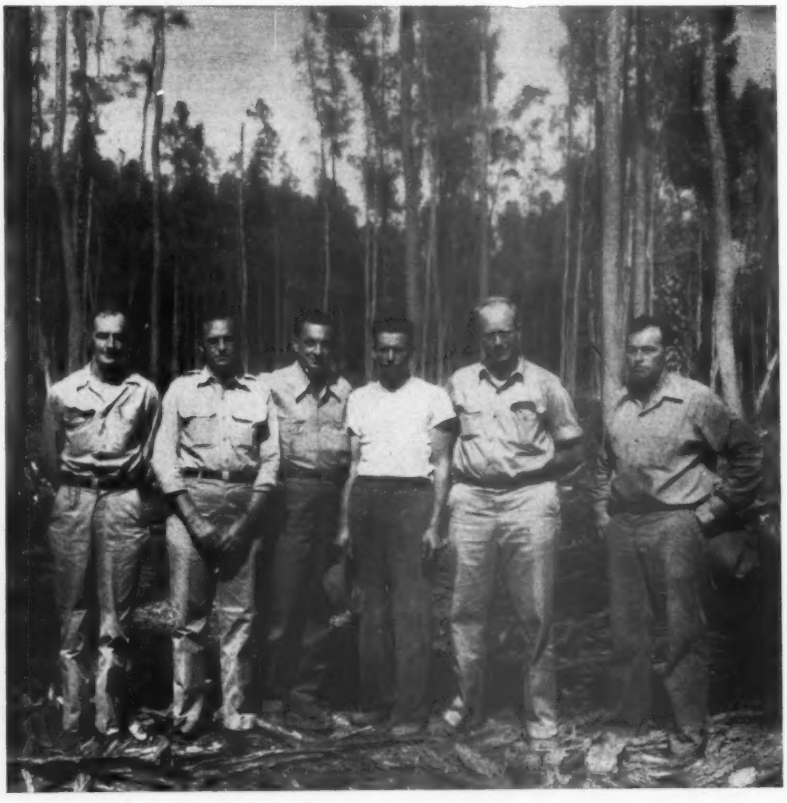
The Greenville mill receives pulpwood by barge, by rail and by truck. Where distances are short, trucks are used, but if this lengthens past 30 miles the shipments may go to either rail or barge. The big factor in division of the movement between these last two is provided by geography, for in many locations the river may swing away from the rail lines, and, in fact, from the improved highway system, too. The most economic delivered price is the determining factor in most instances. There are no highways on the river side of the levees, and those on the land side, at best, are gravel-coated.

The company operates a fleet of barges that carry from 250 to 450 cords of wood each. These are sent as far as 140 miles downstream and 165 upstream, the latter breaking point being Memphis, Tenn. They are moved hither and yon by a towboat powered with two motors capable of developing 900 hp. The company's floating equipment also includes a gasoline-powered boat for carrying labor to and from islands in the river, etc.

Southern Hardwoods Are Used

Originally the company used only willow and cottonwood, but since the first of 1948 has been taking other Southern hardwoods. Willow and cottonwood grow as rapidly as an inch per year, and provide a good pulpwood stand at 20 years from scratch. All growth is from natural

THESE MEN ARE IMPORTANT to U. S. Gypsum Co. pulpwood operations (left to right): C. R. CRAWFORD; F. E. PORTER; JERRY V. WHITLEDGE (chain saw specialist for Henry Disston & Sons); SHERMAN YARBER, pulpwood contractor associate; ED. H. GRAU, Supt., Woodlands Dept; and HERB L. YARBER, Pulpwood Contractor for U. S. Gypsum Co.



● A parade of T-6 and TD-6 crawlers with logging arches keep the logs rolling to the deck of a fast-moving operation in farthest-north Minnesota. Bunching logs in arches increases the production.

Get more logs with INTERNATIONAL CRAWLERS

● International TD-9 diesels keep this Louisiana "brow" supplied with logs as fast as a loading boom can lift them on to truck trailers. Profits mount in proportion to the log volume increase secured.

From northernmost Minnesota forests to southern Louisiana woodlands, International diesel crawlers get out logs for lumber and pulpwood *fast* and at lowered cost.

Basic power for mechanized logging in forests from Canada to the Gulf, International TD-6 and TD-9 diesels set the pace for log production, regardless of weather or footing!

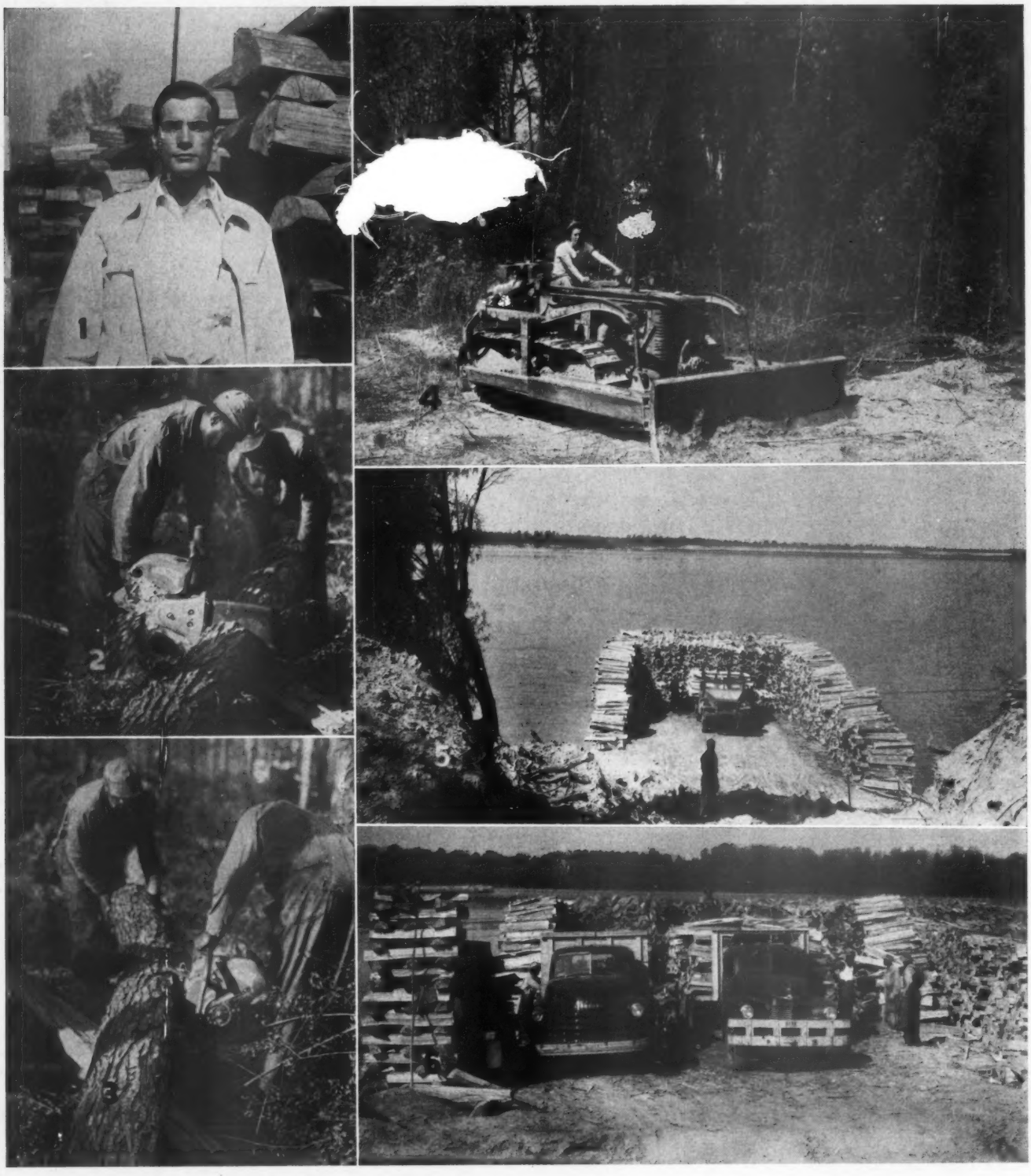
To get the most out of your woods operations—to put your log-getting on a high-paying basis—use International tractors and equipment now available at your International Industrial Power Distributor's plant.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

CRAWLER TRACTORS
WHEEL TRACTORS
DIESEL ENGINES
POWER UNITS

INTERNATIONAL HARVESTER

INTERNATIONAL INDUSTRIAL POWER



MEN AND EQUIPMENT AT U. S. GYPSUM CO., Greenville, Miss., pulpwood operations: 1—Roy Fulton, Woods Camp Supervisor for the company's wallboard mill at Greenville, Miss. 2—A Mercury engine-powered (Kieckhefer) Disston one-man chain saw eats its way through a willow tree felled on Mississippi River bank. 3—Reverse view of one-man chain saw at work; tree will be converted into wallboard. 4—Sherman Yarber, brother of the pulpwood contractor operates International TD-9 equipped with Bucyus Erie bulldozer blade for breaking way for trucking of pulpwood to the Mississippi. 5—After bull-dozer equipped tractor cuts approach in river bank, trucks run onto barge; their loads distributed around in stacks to keep vessel on even keel; barges proceed to wallboard mill. 6—Chevrolet (left) and International truck (right) load pulpwood on a barge for trip across levee. Unloading at Greenville is from placid backwater, but still there is 40-ft. fluctuation between high and low water levels.

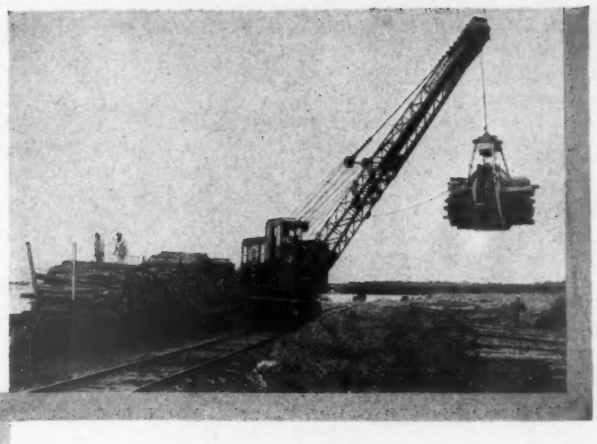
re-seeding.

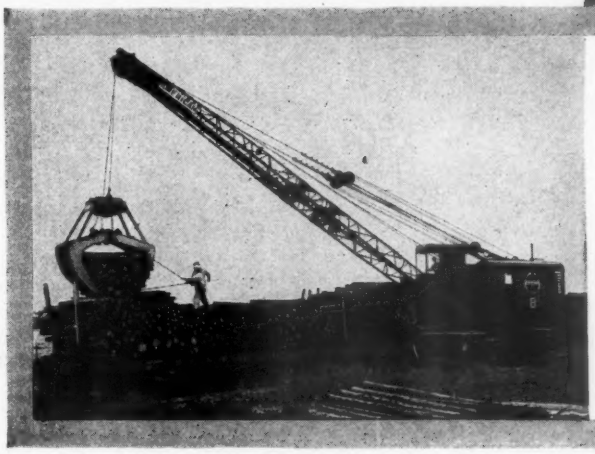
The company's fee lands (all inside the river levees) amount to about 45,000 acres, and the cuttings runs from 30% to 40% of supply from this source. The inescapable factor of fee land cutting is in those cases in which the Mississippi River decides to eat away a river bank or island and the only question is how much time is there for removal of trees before they are tumbled into the stream.

All pulpwood is cut into 4-foot lengths and all willow and cottonwood peeled. These two species are ground in the mill. The hardwoods are unpeeled but undergo

FIVE...SIX...

pick up sticks





SEVEN...EIGHT...

lay them straight

NINE...TEN...do it again!

The American Dieselectric is both a locomotive and a crane. But when you see it handling pulpwood, you will classify it also as a first class loader and stacker. Specially designed models like this one, built for Minnesota and Ontario Paper Company, cut the cost of "picking up sticks" to rock bottom. Notice the high, off-center cab, which lets the operator see the top of high pulpwood piles. Think of *diesel* power to the deck, *electric* power to the wheels . . . the great, basic invention that made the DIESELECTRIC. With 14,000 lbs. of wearing parts eliminated; with new, speedy "live boom" action; with a wonderfully clean, efficient machinery deck, the AMERICAN DIESELECTRIC offers such savings that it actually *pays for itself in five years!* Want more facts? Mail the coupon for illustrated catalog.

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St. Paul 1, Minnesota

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AMERICAN HOIST & DERRICK CO., St. Paul 1, Minnesota

Please send me Catalog 600-L-4, on the American Dieselectric Locomotive Crane 43

Name_____

Company_____

Address_____

City_____ State_____

a digester cooking process before blending. The pulpwood is put through a slasher before going to the grinders.

Originally the pulpwood was loaded on the barges up and down the river by using a chute which landed the pieces on deck with a big "thump" to be stacked by hand. Subsequently the use of the up-to-date bull-dozer equipped tractor was developed whereby the river bank was cut down to a barge mooring and pulpwood trucks run directly aboard for stacking. Ordinarily the company operates four motor trucks to unload barges at the mill. The company and its contractors own and operate a fleet of about 50 motor trucks.

Mechanical Equipment

The equipment needed to furnish pulpwood for the mill varies according to the season, and, when the tough wet winter months set in, the company has 15 "Cat" wagons, ten or twelve International TD-9 tractors, and four Caterpillar D-4 tractors to press into service. Even when the weather is dry, operations are not too easy because of the excessively sandy characteristics of the built-up river banks on which they are conducted.

The mechanical equipment, that is, the Caterpillar wagons and the tractors for hard weather, are viewed by the company as making possible winter logging, thus evening out the peaks and shallows of pulpwood production.

The company's pulpwood operations are conducted largely through contractors. Because the actual pulpwood cuttings may be performed at some distance from an established community, these contractors operate camps that have a transient nature. In all there may be a dozen of these in operation, and their life may vary from three months to twelve months. In any event, their life may be terminated by the river's rise.

In pulpwood cutting the company cuts down to a 10-inch tree diameter, and a four-inch small end diameter for pulpwood. They use power saws and hand cross cut saws. This equipment includes the Disston DO-1100 one-man chain saw weighing 35 pounds. Two men will average three cords per day including felling, bucking and peeling.

To promote maximum efficiency in using the chain saw, a one-day school was conducted at woods department headquarters by Jerry V. Whitledge, chain saw specialist for Henry Disston & Sons. Every man who controlled a new Disston chain saw brought it in. Whitledge first took up the little things that caused the chain saw to stop; i.e., a "what's your trouble" clinic in which he demonstrated the short cuts to getting the saw back into action. Then he showed them how to take the saw down and reassemble it.

As a result, those who handle the chain saw for U. S. Gypsum know how to handle it and keep it in operation. There exists no printed brochure that will accomplish this as perfectly as this type of demonstration.

S. A. Smith is works manager of the Greenville mill. Ed H. Grau is superintendent of the woodlands department; Frank W. Norris is his assistant. The procurement division also includes Roy Fulton, wood camp supervisor; Frank Colbert and James Gatling. W. W. Dannenberg is timber buyer under Mr. Grau.

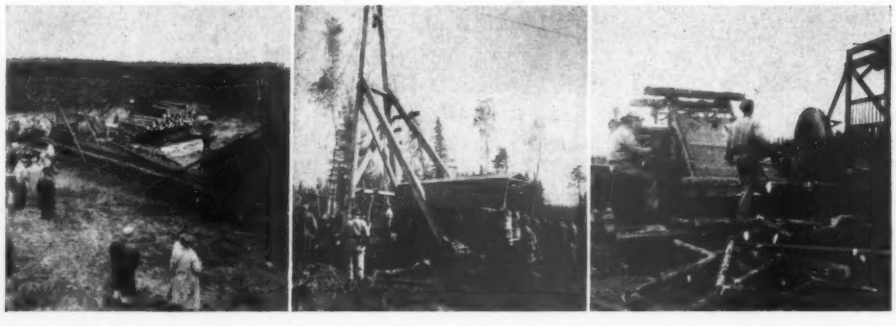
The tow boat division includes Capt. G. L. Dickey; Engineer J. H. West; Assistant Engineer Vaughn, and Pilots J. R. Malone and J. E. Haney.

Earl Nelson is superintendent of the mill wood yard and Frank Corrola is his assistant.

MARATHON OPERATION SEEN

Cable Yarders and Nesco Slashers Shown

The Canadian industry's woodlands section held a meeting on cable yarding, on operations of Marathon Paper Mills of Canada, Ltd., at Stevens, Ont., Sept. 20-22, attended by 83 delegates from government, industry, and manufacturers. One day was devoted to a field examination of Marathon's mechanized operations, which feature cable yarding and the use of Nesco slashers at the concentration points. Papers were given by B. J. McColl of the woodlands section, describing cable yarding systems in use in eastern Canada, and summarizing industry's experience with them, and by W. E. Mair of Marathon, outlining the history and development of their system.



EQUPMENT being demonstrated at Canadian meeting at Stevens, Ont.: (l. to r.) Nesco slasher, high lead yarder, and Nesco slasher and loader.

The Nesco slasher is a product of Northern Engineering & Supply Co., Ltd., Fort William, Ont.

Here follows a description of yarding and slashing operations as carried out by Marathon:

Yarding may begin any time that the fallers have enough wood on the ground to assure a constant supply without delays for the yarders. This may be from 2-4 weeks after the beginning of falling operations. It is important that yarders begin as early as possible and that all yarders to be used be put into operation as quickly as possible.

Tree lengths will be skidded in either by the ground skidding system or by a sky-line system, depending on conditions. The tree lengths will be piled in the cold deck up to a height of about 15 feet. Usually only one yarder will work at a set-up until it is completed. It will then move on to the next set-up, leaving the first one ready for the slasher.

The yarder crew usually comprises a hook tender, who is the straw boss in charge, 2-3 chokermen, a chaser at the foot of the yarder, and a yarder operator. These men work as a unit and while they are paid on a daily basis they also receive a production bonus for all production over and above their quota. The quota and rates will vary with conditions, but are pre-determined.

Depending on forest conditions, i.e., density, species, terrain, size of timber, an operation of this kind will require from 2-3 yarders for each slasher. The production which may be expected from each yarder will vary greatly. It may be as little as 25 cords per day or as much as 55 cords.

When the yarders have built up a sufficient supply of tree lengths in cold deck, the slashers are ready to move in. Here again this may be from 2-4 weeks after the start of yarding operations. Again many of the crews will come from among the fallers, for now we require not only the slasher crews, but truck drivers as well. This completes the drain on fallers, and those who continue falling for the balance of the season are less permanent men, though many of them do become specialists of one kind or another as openings present themselves.

Slashers move in to the cold decks, cut

ANALYZE and MECHANIZE WITH Lorains!

LORAIN FEATURES TL SERIES

1. All-Weather, All-Year-'Round Operation.
2. Convertibility to Shovel, Clam, Drag, Hoe.
3. 2-Speed Crawler or 9 Rubber-tire Mountings.
4. Starter, Generator, Lights are Standard Equipment.
5. Unit Assembly for Easier Service.
6. 5 Identical Clutches.
7. Anti-Friction Bearings.
8. Oil Enclosed Gears.
9. Interchangeable Parts.

● This Lorain "TL" crane replaced costly hand labor on the job of transferring pulpwood from trucks to barges for shipment to the mill 150 miles away.

Equipped with a specially designed 4-legged bridle sling, the "TL" does the job *fast and neatly at less than half the former cost* in handling pulpwood alone.

Additional savings result because delivery trucks are unloaded at 4 minute instead of 40 minute intervals—no traffic jams—and trucks are back to the woods for more, sooner. Barges are loaded in one day instead of 6 days, eliminating the tie-up of expensive floating equipment.

It pays to *Analyze and Mechanize with Lorains*—and your nearest Thew-Lorain distributor can show you how. Ask him or write directly to—The THEW SHOVEL CO., LORAIN, OHIO.

Get the facts! Send for this descriptive bulletin on Lorains handling pulpwood.

CRANES • SHOVELS
DRAGLINES
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THEW Lorain®

the wood into 8-foot length and load it on trucks. Species are segregated on this operation; that is, poplar is slashed separately and sent to dry landings where it will remain until the following spring. Softwood species during the summer months are dumped into the driving stream.

The crew of a slasher consists of a sawyer, a top loader, a winch operator, two hookers, and one unhooker. One of these men is straw boss in charge of the operation. He may be any one of the six and always will be one with more experience and ability to handle men.

Production at the slasher will vary with conditions but the extreme will be less pronounced than on yarding operations. Each slasher should average from 70-90 cords per day or more. Under favorable conditions they may do much more than this. A record of 116 cords has been set.

The slasher crew is paid on a daily basis, but like the yarder crew they receive a production bonus for all production over their basic quota of 70 cords.

The slasher loads 8-foot bolts on dump trucks, which deliver either to the dry landing or to the water, depending on species. Somewhere enroute at a central point here is a short stopover for the scaling of each load, which is by government scalers and usually at the same point for painting one end of each log with a yellow paint smear (Marathon's registered log mark). Unloading at landing or in the water is done by hydraulic dump.

40 Years of Forestry

"Forty Years of Western Forestry Progress" will keynote the annual conference of the Western Forestry and Conservation Association, at the Multnomah Hotel, in Portland, Ore., Dec. 8, 9, and 10. Open forums will allow prominent leaders of forest industries, land owners, loggers and foresters from the U. S. and Canada to discuss fundamental problems.

- MEETINGS -

N.E. Section, Forest Products Research Society (Fall Meeting) — Hotel Statler, N.Y.C. Oct. 31-Nov. 1

No. Calif. Section, Forest Products Research — Auditorium, San Francisco ..... Nov. 4

Va.-Carolinas Section, Forest Products Research — Student Union Bldg., Duke U., Durham, N. C. ..... Nov. 4-5

Pacific Logging Congress Machinery Show—Civic Auditorium, Seattle, Wash..... ....Nov. 14-16

Western Forestry & Conservation Assn. — Multnomah Hotel, Portland, Ore. .....Dec. 7-10

So. Pulpwood Conservation Assoc. .... Biltmore Hotel, Atlanta, Ga. ..... Feb. 15

TOMAHAWK MEETING

(Continued from page 36)

the mills and their executives are dealing with nature.

A Long Time for Nekoosa-Edwards

J. E. Alexander, president of Nekoosa-Edwards Paper Co., observed that his company celebrated in October its 25th anniversary of a forestry program. It now has 110,000 acres of land in the Lake States and a nursery with an annual production of 1,500,000 trees.

Mr. Alexander explained the need for approaching such a program with a long-term investment plan in mind. He spoke of their mechanized tree planting unit that handles 15,000 trees a day.

Fire losses, he said, have been but 2.8 acres per fire in the 48 fires they have had in 20 years.

National Container Demonstration

C. J. McLaren, vice president of National Container Corp. of Wisconsin, on whose plantings a demonstration was held for the group, spoke in terms of Lake States forestry, which includes Michigan, Minnesota and Wisconsin. He said:

"During 1948 the Lake States used 2,951,300 cords of wood—24.58% in Minnesota, 59% Wisconsin and 16.42% in Michigan. Of Wisconsin's 1,741,075 cords, we produced only 468,265 cords or a little over 26%. There were 795,000 cords imported.

"In the three Lake States we have a potential forest acreage of 50,345,000 acres, which is about equally divided. But there is a catch—70% of the available jack pine, for instance, is in Minnesota which uses only 29% of the jack pine consumed.

"The public controls 42% of this acreage. Of the private 58%, one-half is owned by farmers. Then 29% of the balance, or one-half the private ownership is held in industrial or small, scattered ownerships. This represents 14,600,000 acres and the pulp industry owns a little over 2,000,000 or 13% of private land, or 3.74% of the total forest land in the Lake States.

"The nearest estimate on inventory of pulpwood volume in the Lake States shows 19.1 millions of cords in spruce and balsam, 6.6 millions in pine, 7.7 millions in hemlock and 42.8 millions of cords in aspen.

"It is interesting to note that the 1948 'used' figure in the Lake States, including imports, is almost the allowable cut, the only trouble being that we have only 945,000 cords of coniferous wood against a used figure of 2,260,842 cords; while we have an allowable cut of 2,040,000 cords of aspen and in 1948 used only 568,506

HERE ARE VIEWS OF NEW WOODS EQUIPMENT demonstrated to several Presidents and other top officers of Wisconsin mills and other guests of National Container Corp. of Wisconsin on Oneida County field trip. This is first appearance of a woodlands chipper in Wisconsin. Top view shows J. J. Murray Mfg. Co. (Wausau, Wis.) 10-knife blower type disc chipper which reduces 20 cords to chips in an hour. In inset at right, chips are shown pouring out of arched feeder into Baughman Mfg. Co. (Jerseyville, Ill.). Hi-Speed, self-unloading semi-trailer conveyor truck which unloads quickly. Hardwoods under 4 inches are being chipped.

Below — Tilting-bed tractor, one of ten different types of trucks and tractors equipped with water tanks, plows, pumps, and radio sets, which were demonstrated at State Forest Protection Headquarters at Tomahawk.

cords of 'popple' and birch—or 25% of the allowable cut.

"There is a thorn in our sides, though, as pecker-wood mills, mines and other users take 40% of the allowable cut, leaving this industry only 60% in 1,771,000 cords. Pulpwood in the Lake States has almost doubled since 1926."

In concluding, Mr. McLaren stated that National Container feels that there is a great untapped source in the vast amounts of hardwoods. They feel that they should own the necessary land to produce one-half their wood requirements and are working toward this end.

Talks by Everest and Becker

One section of the first-day's tour included a "Trees for Tomorrow" camp near Tomahawk, Folke Becker, president of Rhinelander Paper Co. spoke of this movement which he headed and of the operation.

Clark Everest, Marathon Corp., told of the fine work in plantations and forestry development by five Wisconsin industrial concerns, Consolidated, Mosinee, Rhinelander, Nekoosa-Edwards and National Container. He remarked that some sections of the country still lagged in such programs.

Mr. Everest expects that in the Lake States there will be a sag in production of sufficient wood to meet needs. He further expects that the demand for wood is bound to increase with the increase in population and further use of paper.

"If history repeats itself," warned Mr. Everest, who has been in the pulp and paper business for nearly 50 years, "it is more sensible to get started through voluntary action than to wait until the whole business may be subject to so much regulatory legislation that some of us give up in disgust."

The indoor session was presided over by S. B. Copeland, president of The Northwest Paper Co., Cloquet, Minn.

New Equipment Shown

A significant feature of the field trip in southeastern Oneida County, north of Bradley, on a plantation owned by National Container Corp. was the first appearance of a woodlands chipper in Wisconsin and one of the first on the continent.

This Murray chipper is a necessary complement to the new semi-chemical operation at Tomahawk which has been operating since late August. Working on aspen, the chipper utilizes one-third more of the waste wood. It is powered by a 100-hp. General Motors diesel connected to a Murray 10-knife disc. The machine is handling hardwood under four inches in diameter, but observers believed it can handle heavier wood. The logs would not be classed as "round wood." Twenty cords an hour are chipped.

With the chipper the company uses a Baughman semi-trailer conveyor truck designed for quick unload. Eight to ten tons of chips may be carried. The demonstration took 21 cords of wood—aspen and popple—were removed from a two-acre site.

Lake States Loggers Set Barker; Talk Safety

The Lakes States Technical Committee, American Pulpwood Association, held a quarterly meeting under chairmanship of J. V. Martin, Rhinelander Paper Co, at Copper Harbor, Mich., Sept. 14-15, attended by 37 foresters and woodlands men. "Safety and Compensation Insurance in the Logging of Pulpwood," was the topic.

Next meeting will be at the Spaulding Hotel, Duluth, Minn., Dec. 7 and 8; the topic to be "Effect of Logging Practices on Forest Regeneration." W. H. Hildebrand, Escanaba Paper Co., Escanaba, Mich., is program chairman.

At the September meeting there was a demonstration of barking in the woods with a Swedish chain barker. The membership went to Trout Creek to witness this operation, still in experimental stage.

J. V. MARTIN (left), of Rhinelander Paper Co., Woodlands Div., Chairman of Copper Harbor meeting; and GEORGE CARLETON (right), President of Detroit Sulphite Pulp & Paper Co.

Presentation of papers on safety and discussions followed. Much of this meeting was occupied with suggestions for requiring training in safe practices in the mills and in the woods.

Don't wrestle with your Felt problems.
Use *DRAPER FELTS.*

The DRAPER Felt

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASSACHUSETTS

RALPH E. BRIGGS, Sales Manager

● BRADFORD WEST, *Pittsfield, Mass.* ● WILLIAM N. CONNOR, *Jr., Canton, Mass.* ● L. H. BREYFOGLE, *Kalamazoo, Mich.* ● WALTER A. SALMONSON, *2514 Northeast 59th Ave., Portland, Oregon* ● L. L. GRIFFITHS, *Jr., Kalamazoo, Mich.* ● HAROLD H. FISH, *Syracuse, N. Y.* ●

Personals

MIDDLE WEST

J. R. KIMBERLY, vice president in charge of sales, headed a series of service meetings in Neenah, Wis., for about 100 members of Kimberly-Clark's sales force. Other executives who participated were Ernst Mahler, executive vice president; C. H. Sage, H. G. Boon, W. H. Clifford, vice presidents; and W. R. Kellett, general superintendent. A. G. Sharp, administrative assistant to Mr. Kimberly, was in charge of the program. J. B. Catlin is manager for the paper sales division, R. B. Sawtell for wadding; T. D. Ward, advertising and promotion; C. W. Miller, general sales office. R. A. Brabbee, sales training manager and C. S. Marty, market research manager, made presentations.

Henry Madsen Dies On Appleton Golf Course

Henry P. Madsen, president and general manager of Appleton Machine Co., died suddenly Oct. 13 of a heart attack on the Butte des Morts golf course at Appleton, Wis. He was just 50 years old and widely known in this industry.

Mr. Madsen, born in Beloit, Wis., lived in Appleton 30 years where he was Chamber of Commerce director for two terms and prominent in various organizations. His widow, a married daughter in Chicago and three sisters survive.

ROBERT EDGAR BOYD, vice president of Appleton Coated Paper Co., Appleton, Wis., died at the age of 73 in a Chicago hospital Sept. 22. Born and raised in Appleton and a graduate of Lawrence College, he lived many years in Chicago, where he was associated with Moser Paper Co. Burial was in Appleton.

HAROLD W. HILLER (left), Ass't Technical director at the Marinette, Wis., plant of Marinette Paper Co. (a Scott Paper Co. subsidiary), has been selected by Scott to attend the Institute of Paper Chemistry at Appleton for 1949-50 school year as a special student. Mr. Hillier joined Scott's technical division in 1938 after graduation from Syracuse U. where he received his B.S. degree in chemical engineering. He has been in positions at Chester, Pa., and Empire, Ore., for the company.

PAUL W. BARTHOLOMEW (right) has been appointed assistant sales manager for the Paper Division of Minnesota & Ontario Paper Co., Minneapolis, C. T. McMurray, vice president for sales, announces. Mr. Bartholomew was born at Kokomo, Ind., is a graduate of Purdue in chemical engineering. He comes to Mando from the Hawthorne Paper Co., Kalamazoo, Mich., where he was Technical Director since 1945. At Hawthorne he did extensive development work and supervised customer sales and technical service. Prior to joining Hawthorne, he was for 15 years with Hercules Powder Co.

Ebasco Chicago Office Headed by R. H. Bradford

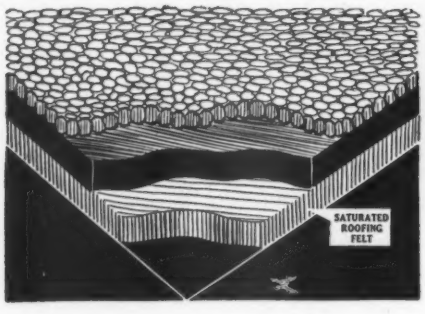
Ebasco Services, Inc., engineering consulting firm, has opened a Chicago office at 209 So. La Salle St., according to T. C. Wescott, president. Ebasco headquarters are at 2 Rector St., New York. The new Chicago office is managed by Rolland H. Bradford, a native of Missouri, who has spent more than 20 years with Ebasco and affiliates.

D. K. BROWN, president of Neenah Paper Co., Neenah, Wis., received word of the death of a sister in Lancashire, England, where he has several brothers and sisters. A brother, Robert Brown, lives in Milwaukee.

F. W. (STUB) JOHNSON, operating manager and plant engineer at Rhinelander Paper Co., returned to his home for convalescence Sept. 31 following a serious illness that involved an operation. He was in the hospital an extended period and friends were cheered with his improvement.

HERB SPECHT, Mill No. 1 pipe shop foreman, was the Thilmany Pulp & Paper Co. foreman selected to be honored in the September issue of the Kaukauna, Wis., mill's house organ. He has a daughter teaching school in Appleton and a son, an all-around athlete, at Central State Teachers College at Stevens Point.

JOAN PEERENBOOM was master of ceremonies for 21 Marathon Corp. girls who fashioned and modeled costumes from formals to bathing suits, all made out of Marathon package labels of all kinds, in an End Label Style Revue at a Marathon foremen's club meeting at Menasha, Wis. *CARL GEISLER,* personnel director, awarded prizes.



Saturating felts . . . with high wood-pulp additions.

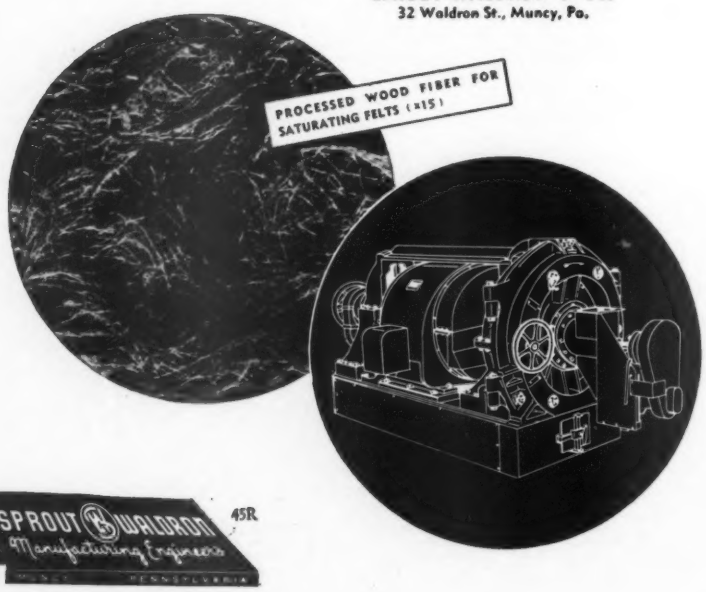
Because of lower manufacturing costs, modern dry felt producers are looking to wood pulp as a partial replacement for rags in the furnish.

On this service, Sprout-Waldron Refiners are the natural complement to the preliminary attrition of the heat and chemically softened wood chips. They assure high tonnages and discharge the pulp as slender fibers without degradation.

In felt production, S-W Refining improves quality and uniformity of saturation. Excellent folding properties are maintained.

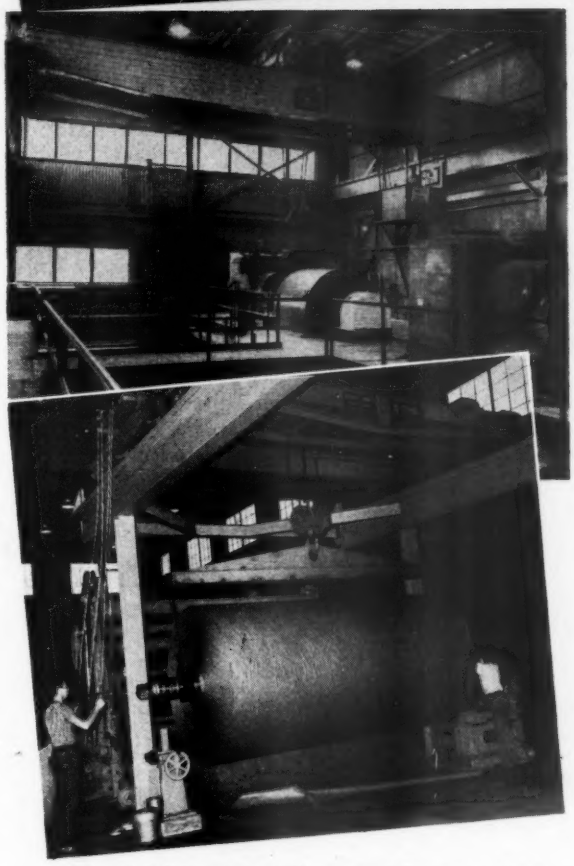
Let us consult with you on your problem.

SPROUT-WALDRON & CO.
32 Waldron St., Muncy, Pa.



SPROUT WALDRON
Manufacturing Engineers
45R

Weyerhaeuser INSTALLS EDERER CRANES CUSTOM-BUILT FOR THE JOB



The bridge cranes illustrated here are two of five installed in the new mill of the Weyerhaeuser Timber Company at Springfield, Oregon. All the cranes were custom-built to exact job requirements. Since 1901, EDERER has engineered and built this kind of equipment for this type industry—supplying exactly the capacity, span and lift to do each job with the greatest economy and efficiency. An EDERER engineer will be glad to discuss your job requirements.

Stand-By Cranes
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EDERER ENGINEERING COMPANY
2931 FIRST AVENUE SOUTH
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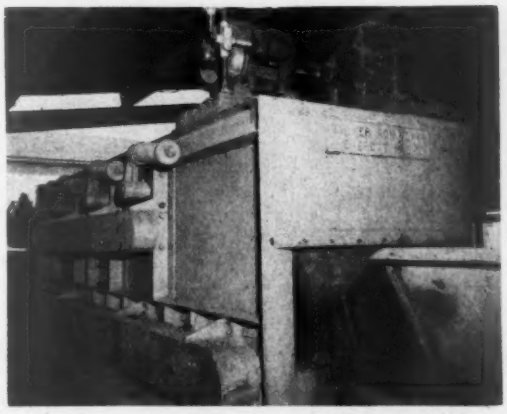
THIS MAKES SEVEN!



The above photograph, taken at **WEYERHAEUSER TIMBER COMPANY'S** Pulp Division, Springfield, Oregon shows the seventh and most recent installation of a

SUMNER SLAB BARKER

It is significant that more Pacific Coast mills have favored SUMNER Slab Barkers than any other make.

Significant too, is the fact that our first installation, in 1944, was also for Weyerhaeuser, at their Everett Pulp Division. Now, after 5 years successful operation they have again chosen **SUMNER** Slab Barker for their newest plant.

SUMNER SLAB BARKER INSTALLATIONS

Weyerhaeuser Timber Company
Pulp Division, Everett, Wash.

Puget Sound Pulp & Timber Company
Bellingham, Wash.

Soundview Pulp Company
Everett, Wash.

Rayonier, Inc.
Hoquiam, Wash.

St. Regis Paper Company
Tacoma, Wash.

Bloedel, Stewart & Welch, Ltd.
Port Alberni, B.C., Canada

Weyerhaeuser Timber Company
Pulp Division
Springfifeld, Ore.

Detailed information gladly furnished on request.

SUMNER IRON WORKS Since 1892
EVERETT, WASHINGTON
In Canada: CANADIAN SUMNER IRON WORKS LTD., VANCOUVER, B. C.
EXPORT DEPARTMENT: FRAZAR & HANSEN LTD.
301 Clay Street, San Francisco 11, California, U. S. A.

Personals

PACIFIC COAST

Lewis Becomes Manager

Jesse R. Lewis, for years mill superintendent and acting manager since the death of Herman Hansen, has now been appointed resident manager of the Anacortes, Wash., mill of Coos Bay Pulp Corp., according to C. Wylie Smith, vice president and general manager.

R. M. (MIKE) BUCKLEY, vice president and sales manager of Soundview Pulp Co., Everett, Wash., was presented with a son, Brian Patrick Buckley, by his wife on Oct. 6 in a Seattle hospital. Both are doing fine.

JOHN T. HOOD (left), has been made Manager of General Electric Co., Apparatus Department, in Tacoma, Wash., according to J. R. Murphy, District Manager, Mr. Hood, who succeeds N. L. Rose, has been transferred from Portland, Ore. Graduate of University of California in 1934, he joined GE in Schenectady, N. Y.

VICTOR E. HECHT (right), Vice Pres. in San Francisco for Zellerbach Paper Co., has assumed direction of sales promotion for all company merchandising depts. with added title, Manager of Sales Promotion Dept.

. . . GRIFFITH ROLLS LAST LONGER!

GRIFFITH RUBBER MILLS

Quality Workmanship Provides:

- Uniform hardness of rubber covering
- Resistance to checking, corrugating and abrasion
- Bonding to the core
- Uniform accurate grind

These features found in Griffith Rubber covered rolls means Longer Lasting Rolls. Saves you money!

Send your rolls to Griffith for Quality rubber covering. The only plant in the Northwest that does precision drilling of suction rolls.

"Quality Rubber Products Since 1911"

GRIFFITH Rubber Mills 2439 N.W. 22nd Ave., Portland, Ore.

Vognild and Noble Promoted by Hooker Co.

Russell Vognild has been appointed assistant western sales manager and Robert E. Noble has been made western sales service engineer, both for the Hooker Electrochemical Co.'s Western Division of Tacoma, Wash., according to Albert H. Hooker, western sales manager.

Mr. Vognild's promotion was recognition of qualifications developed in a 20-year span with the Tacoma plant, excepting his period as major in the U. S. Army Transportation, Persian Gulf Command, during the war.

Mr. Noble has been plant chemical engineer at Tacoma for ten years since graduation from the University of Montana, excepting for his war service as a major in the U. S. Army Chemical Warfare unit. Incidentally this places two majors with a colonel in top Hooker posts, as Mr. Hooker was a colonel in chemical warfare in England.

NORMAN R. LEWTHWAITE, assistant resident manager of Crown Zellerbach Corp., operations at Port Townsend, Wash,. is on leave from the mill and convalescing at his home because of illness. Mr. Lewthwaite has been away from the mill since August. He is member of a family which pioneered the West Coast industry and for years he was kraft pulp mill superintendent at Port Townsend, being recently promoted to his present position.

DR. WENDELL W. MOYER, research director, and *DR. W. M. HEARON,* assistant director, of Central Research Dept., Crown Zellerbach Corp., Camas, attended the September national meeting of the American Chemical Society in Atlantic City. Dr. Hearon gave two papers—one on conidendrin and derivatives and one on some work he did while teaching at MIT, and he was elected to the executive committee of the sugar division, which Dr. Moyer formerly chairmaned.

A. G. "BUFF" NATWICK, assistant resident manager of Crown Zellerbach Corp., Camas, Wash., was nearly converted from salmon fisherman to trout angler by the choice catches he made in Idaho on Middle Fork of Salmon River during late July vacation. He flew 150 miles into the mountains from Boise to make catch of trout ranging up to 2 ft. long.

RICHARD C. ZELLERBACH, son of J. D. Zellerbach, president of Crown Zellerbach Corp., was married Sept. 30 at Westminster Presbyterian church in Portland, Ore., to Miss Leslie Davis Walsh. They left shortly for two month honeymoon in Europe.

ED OTIS, who has been working in the wood room at Crown Z's Port Angeles mill is the son of *MALCOLM OTIS,* resident manager there, was married Sept. 18 in Portland, Ore., to Miss Betty Sagert, of Lebanon, Ore. Ed and Betty met when he lived in Lebanon while his father was the manager of the mill there. He is resuming studies at Oregon State College.

AMERICAN AND CANADIAN BOARD MAKERS get together. Left to right: GERALD F. GREEN, Tech. Director, Fibreboard Products Inc., in Port Angeles; BILL CAREY, Board Mill Supt., Sidney Roofing & Paper Co., Victoria, B. C., and CHARLES F. MEAGHER, Board Mill Supt., Fibreboard at Port Angeles. They were among visitors at Crown Zellerbach mill Open House in Port Angeles, Wash.

Industry Leaders Have Civic Duties

The Bellingham Community Chest drive leaders read like a roster of the pulp and paper industry. Headed by Victor Hughes, secretary of the Pacific Coast Paper Mills, who is general chairman, there follow the names of Lawson Turcotte, executive vice-president, Puget Sound Pulp, who is a director of the Chest. Chairman of the manufacturers group is Jack McMullen, personnel manager of Pacific Coast Paper Mills. Fred Gilmore, assistant superintendent of Puget Pulp, is a Colonel in the manufacturing division.

WALTER F. HOLZER, research chemist for Crown-Zellerbach at Camas, combined international duties with a vacation in New York City late in August. Scheduled for a talk at the United Nations' Scientific Conference on Utilization at Lake Success, Mr. Holzer brought Mrs. Holzer along and took in the sights of Manhattan. Then he hurried west to get set for the national technical meeting at Portland, Ore., of which he was program chairman.

CARL W. CARLSON, recent graduate in chemical engineering at Oregon State College, has joined Spaulding Pulp & Paper Co., Newberg, Ore., as assistant chemist.

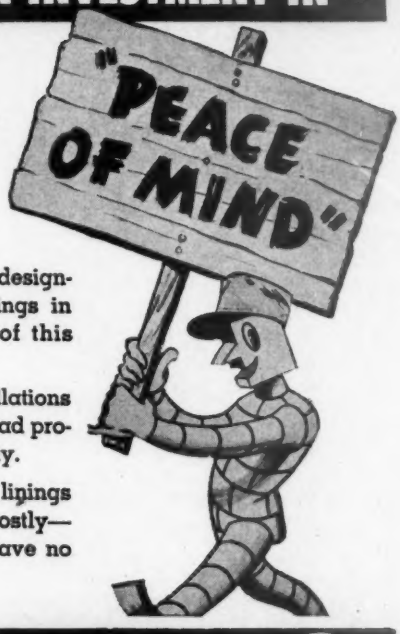
JAMES HYDE, ex-Crown Zellerbach Central Research, now an apple chemical spray producer in Yakima, Wash., recently visited old haunts and friends in Camas.

CURLY MARVIN, purchasing agent, Fibreboard Products Inc., Port Angeles, was host recently to his brother and family from the East and he took them on some trips in the Olympic National Park and Forest.

L. V. FRISCH, general manager of Fir-Tex Insulating Board Co., has moved his residence from Longview, Wash., to St. Helens, Ore., to eliminate commuting from Longview to St Helens where the plant is located.

R. D. HUMPHREY has succeeded the late P. W. Brackett as shift maintenance foreman at Longview Fibre Co., Longview, according to announcement by Carl Fahlstrom, assistant resident manager.

A STEBBINS LUMP SUM CONTRACT IS AN INVESTMENT IN

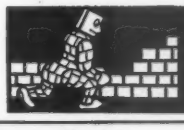


WHETHER the contract covers one chest or tank lining, or all the corrosion or alkali resistant linings for the entire mill, it is Stebbins responsibility to provide a dependable and satisfactory job that assures continuous operation.

Sixty-four years experience in designing, installing and servicing linings in pulp and paper mills is back of this contract.

Thousands of successful installations located on this continent and abroad provide tangible evidence of reliability.

Think twice before investing in linings —the wrong one can prove very costly— be safe, specify Stebbins—and have no regrets.



Stebbins Engineering Corporation
TEXTILE TOWER SEATTLE 1, WASHINGTON

Herb Duvall Dies

Herbert W. Duvall, for years superintendent of the converting plant of the Camas, Wash., Crown Zellerbach mill, died suddenly Oct. 9. It was believed he was almost recovered from a heart attack some two months earlier. Wolfe C. Gigler has been acting converting superintendent.

Mr. Duvall and his late father, James W. Duvall, started the Perfection Twine Co., in 1928 in the basement of their Camas home, the younger Duvall cutting and baling twine in the evenings after his day at the Camas mill. This twine company has expanded to a major industry, now known as Portco Inc., with paper products plant between Camas and Vancouver, Wash.

LENNART LUNDBERG, son of Halvar Lundberg, pioneer chemical engineer and consultant of Seattle, has been transferred by Weyerhaeuser Timber Co. from its kraft mill staff in Longview, Wash., to its new kraft containerboard mill at Springfield, Ore. He is sulfate cook in the pulp department.

VINCENT CECIL HOBBS, 54, secretary of Fibreboard Products, Inc., and subsidiaries died in San Francisco last month. Mr. Hobbs had been with with Fibreboard and predecessor companies 31 years. He was born in 1895 at Pomeroy, Wash.

MYRON BLACK, mill manager at Inland Empire Paper Co., Spokane, enjoyed a reunion in Portland with P. K. Baird of U. S. Forest Products Laboratory, Wis. When Mr. Baird was chemist at Inland Empire, 1919-1922, Mr. Black was working there summers between terms at University of Washington.

Doug Morris, Engineer, Widely Known in Mills, Dies

Douglas C. Morris, a partner in the James Brinkley Co., engineering firm of Seattle, with which he was associated the past 12 years, died Oct. 4 after a long illness at the age of 51. Widely known in the Northwest mills, Mr. Morris moved to Seattle in 1937 after several years in Yakima, Wash., operating a fruit industry machinery plant. He was born in Republic, Wash., and attended school in Everett.

He is survived by his widow, Ida; a daughter, Ann; his mother, Mrs. E. B. Morris, and a sister, Mrs. A. W. Guttormson, the latter two living in Everett.

H. V. "JACK" MORRIS, office manager at the Fibreboard Products mill in Port Angeles, died Sept. 27 in a Port Angeles hospital after being ill since last March. He is survived by his widow and two daughters. A son was lost in the service overseas. Mr. Morris had been in Fibreboard service for 28 years and was office manager seven years. *LEO McCLOSKEY* has been acting office manager since his illness.

ROBERT M. TRUE, General Dyestuff Corp. representative in Portland, Ore., has been elected vice president of the University of Michigan alumni of Oregon and chairman of their fund raising committee.

BOB HEUER, shift superintendent, Weyerhaeuser Timber Co. sulfite mill, Longview, Wash., was credited in an Elks club announcement with having had an important part in drawing plans for a new 21-story Elks lodge in Longview.

Personals

SOUTH

General Clay Heads Ecusta Paper Corp.

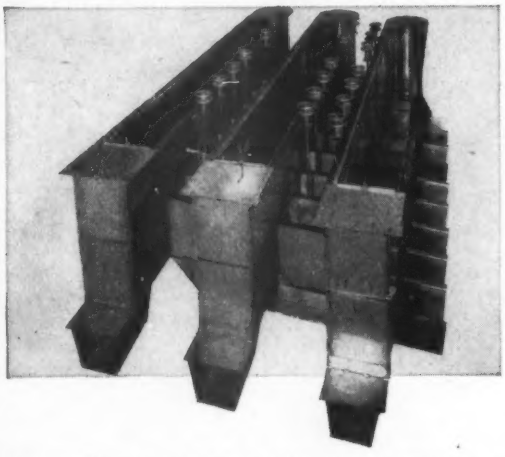
General Lucius D. Clay, famous as the recent postwar commandant in Berlin, has been named the new president of Ecusta Paper Corp., Pisgah Forest, N. C. Harry H. Straus, former president, is now chairman of Ecusta's board.

ERNEST KURTH, president of the Southland Paper Mills, Lufkin, Tex., was named the South's Man of the Year by the editors of "Dixie Business," as he received more votes than any other of 50 business leaders.

C. E. PATTON (left), Tour Foreman for Macon Kraft Corp., Macon, Ga., and H. L. PATTON (right), until recently Night Superintendent of Chase Bag Co.'s Chagrin Falls, plant, get together in Macon for some brotherly shop talk.

T. T. DUNN, resident manager and a vice president of Union Bag and Paper Corp., Savannah, Ga., is a vice president of the Savannah Chamber of Commerce in which he is very active.

INCREASE PRODUCTION
CUT MAINTENANCE
WITH B-H ENGINEERED EQUIPMENT



Brown-Hutchinson Fabricated Monel head box with polish on inside assures maximum wettability, stock cleanliness.

B-H engineered stock lines and head box installations throughout the industry have set records for long trouble-free life. Chiefly of Monel and stainless steels, they are corrosion free, free-flowing, lightweight for easy installation and portability. The satin-smooth inside surface of the pipe lines prevents slime formation and fiber buildup and the resultant clogging of lines. Maximum stock cleanliness is guaranteed. Typical stock lines have operated with no maintenance problems for more than 15 years! Write for booklet illustrating Brown-Hutchinson's cost-saving equipment for the pulp and paper industry.

- Alloy Pipe & Fittings
- Head Boxes
- Save-all Trays
- Steel Troughing
- Winder Shafts
- Pressure Vessels
- Tanks (steel, alloy, lead or rubber lined)

B-H

1831 Clay St.
Detroit 11,
MICHIGAN
Trinity 4-0080

BROWN-HUTCHINSON IRON WORKS

Serving: Paper & Textile — Chemical and Petroleum — Metal Processing — Food Processing INDUSTRIES

St. Joe Paper Co. Shifts Personnel

Important changes in the sales organization of St. Joe Paper Co. have been effected, involving establishment of the mill division sales office at Port St. Joe, Fla., under J. C. (Jack) Belin, according to announcement received from Harry H. Saunders, mill production manager.

Mr. Belin, who will handle all sales of containerboard and corrugating medium, has been elected Mayor of Port St. Joe.

Vincent H. Urquhart has been appointed sales manager of the Container Div. at South Hackensack, N. J. Laban W. Trapp, Jr., has been appointed sales manager of the Container Div. at Houston, Texas; and Terry W. Hinote is the new superintendent of the Container divisions box plant in Houston, Texas.

ERNEST ROSSITER, president of Southern Paperboard Corp., Port Wentworth, Ga., a Robert Gair subsidiary, returned to the mill late in September after a several weeks' vacation featuring hunting and fishing.

E. M. LEAVITT, general superintendent of North Carolina Pulp and Paper Co., Plymouth, N. C., spent his 1949 vacation in the area of the Thilmany mill from where he came to join the Plymouth organization.

GEORGE P. SMITH is now assisting Walter K. Graham, southern representative of A. O. Smith Corp., at Atlanta.

O. C. ABBOTT, who served southern pulp and paper industry out of the Atlanta office of The Bristol Co. (Instruments), is now working out of the Detroit office of that company. D. C. Faith is now in Atlanta.

WAYNE LINDGREN, the Carco man in the South, had a worried week-end recently when—while Mr. Lindgren was out in the woodlands—Mrs. Lindgren and young son were involved in an automobile accident in Savannah. Fortunate-up, however, injuries were slight and both quickly recovered.

ROBERT N. ("BOB") HOSKINS, Industrial Forester for Sea Board Airline Railroad Co., Norfolk, Va., has been named chairman of the conservation committee of U. S. Junior Chamber of Commerce. The committee is planning a nation-wide tree planting program sponsorship. Bob also became father of his second daughter during the summer.

L. H. QUINN, who is associated with his father L. A. Quinn as representative for Heppenstall Co. in Birmingham, Ala., was out of the office two weeks in September to have an appendectomy.

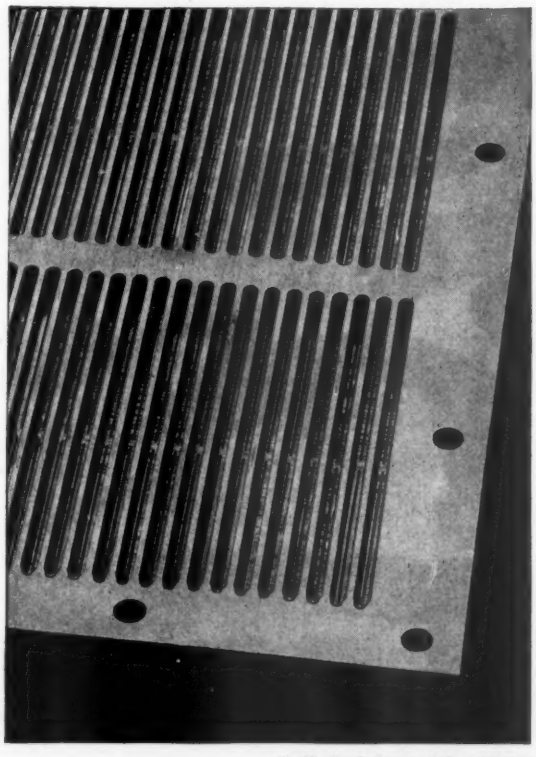
A. L. LEMON, agent in Birmingham, Ala., for Reliance Electric & Engineering Co. and for Electric Machinery Mfg. Co., has moved his office from 1722 First Ave. North, to 204 North 9th St. Robert B. Reed, Reliance engineer in the territory since last July, works out of Mr. Lemon's office.

WIRE CLOTH
FOR PULP AND PAPER MILLS

PHOSPHOR BRONZE...MONEL...STAINLESS STEEL

AVAILABLE IN A BROAD RANGE OF CONSTRUCTIONS
AND ALLOYS FOR CYLINDER FACES, SAVE-ALLS,
DECKERS AND THICKENERS, FILTERS AND WASHERS

Pacific Coast Supply Company
PORTLAND, OREGON - SAN FRANCISCO, CALIFORNIA



Comparative Screening Tests Show FITCHBURG "NEW TYPE-DUPLEX SLOTS"

not only Screen More Stock but maintain high capacity hour after hour

Tested by a leading Sulphite Paper Mill against 5 other manufacturers' plates for several months they showed considerably better screening capacity in every test. *Write for copy of results.*

Fitchburg Screen Plate Co., Inc.
301 South Street, Fitchburg, Massachusetts

Pacific Coast Representative: JACK E. JOHNSON, Holly Acres, Oswego, Oregon

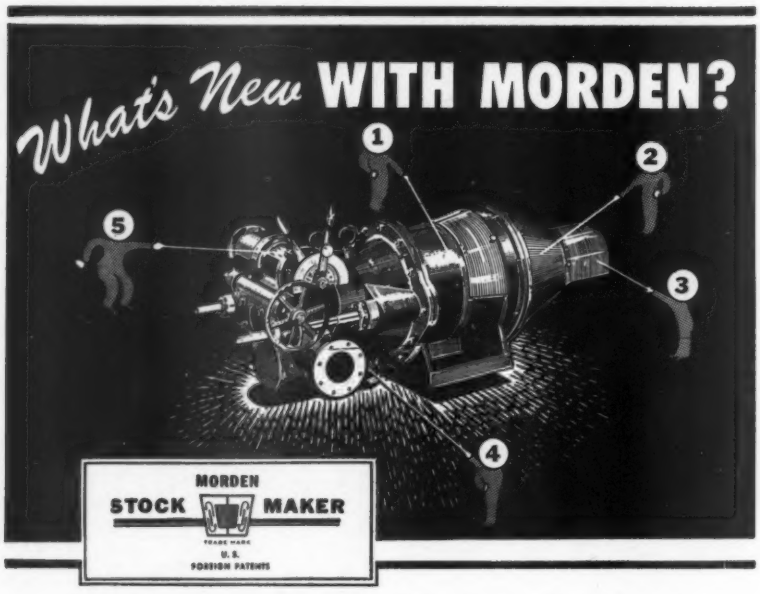
Personals

CANADA

H. R. MacMILLAN, formerly president of H. R. MacMillan Export Co., parent company of Nanaimo Sulphate Pulp, Ltd., has become chairman of the board, being succeeded in the presidency by *B. M. HOFFMEISTER*, formerly vice president.

RALPH M. SHAW, formerly general sales manager and director, becomes a vice president. *W. J. VAN DUSEN* has become vice chairman. *L. R. SCOTT* and *B. M. BALLENTINE* continue as vice presidents.

HERE ARE THE ENGINEERS of Abitibi Power & Paper Co.—Some of the men who have been responsible for this big Canadian company's expansion and modernization program during the past three years. Standing, left to right—J. E. FREEMAN, Sturgeon Falls; J. P. FREEMAN, Iroquois Falls (father and son team); D. D. REEVES, Fort William; M. O. GRIFFITH, Beaupre; M. W. TURNER, Pine Falls; R. H. BURNS, Sault Ste. Marie; R. J. ASKIN, Manager of Mills, Toronto; Sitting—J. BOURKE, Port Arthur; W. H. REEKIE, Chief Engineer, Toronto; R. R. HOLMES, Smooth Rock Falls.



Through the years mill experience has proven that the Morden "Stock-Maker" excels for fiber beating.

Each year gives additional evidence of its versatile and efficient beating and refining treatment in many types of pulp and grades of paper.

For the last twelve years the basic and outstanding principles of Morden treatment have not changed. However, we are constantly on the alert to even further improve its mechanical features. For instance, we have recently made improvements such as:

1. Adding a lantern ring in the packing gland.
2. Providing a copious oil reservoir by enclosing both the thrust and radial bearing in a one-piece cartridge.
3. Adding an integral coupling guard.
4. Adding a generous clean out sump for tramp metal.
5. Adding a plate with all basic operation and maintenance instructions directly on the machine housing.

Let us explain "What's New" in Morden uses and how the "Stock-Maker" can further improve your beating and refining operation.

MORDEN MACHINES COMPANY
PACIFIC BUILDING • PORTLAND 4, OREGON

In Canada
The William Kennedy & Sons, Ltd. Owen Sound, Ontario

In England
Millspaugh, Limited, Sheffield

WILLIAM B. SCOULAR, development engineer for Ontario Paper Co. and former chief engineer for Powell River Co., and *EDWARD J. CALNAN*, chief steam plant superintendent for Ontario Paper, were among persons killed in that widely publicized and sensational Canadian airlines explosion and crash between Montreal and Baie Comeau.

H. M. S. LEWIN, general manager and vice-president, Bowater's Newfoundland Pulp & Paper Mills, has been making a survey of pulp and paper market conditions in the eastern states and provinces.

TORE AHLEN, representative-engineer for A. B. Svenska Flaktfabriken (Stockholm) in Three Rivers, Que., has been touring the southern states.

J. K. NESBITT has resigned as purchasing agent for Brown Corp., in Quebec to run his own management counsel office.

F. Y. WALTERS, pulp and paper mill sales manager for John Inglis Co., Toronto, has been visiting India in connection with negotiations for building a pulp mill there.

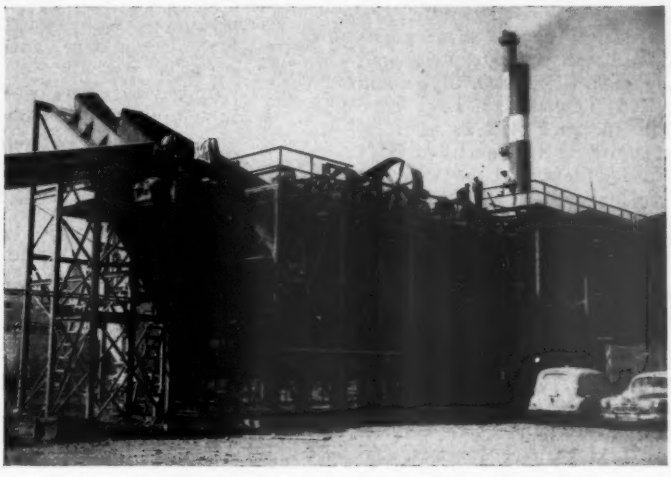
ROBERT HALL, executive of Canada Paper Co., Montreal, visited British Columbia pulp and paper offices in early August, while on a western tour.

J. A. YOUNG, first vice president and treasurer, Pacific Mills, Ltd., accompanied by *MAYNE D. HAMILTON* and *W. E. WINTEMUTE*, directors, all of Vancouver, made an informal visit to the Ocean Falls mill recently.

ARNE HELLSTROM, son of *GUS HELLSTROM*, and associated with his father in Paper Machinery, Ltd., Montreal, planned to attend the start-up of the dryer at Coosa River in November.

GEORGE BURTON, formerly of Spruce Falls Power & Paper Co., Kapuskasing, Ont., has been appointed maintenance superintendent of the Milles Roches mill of Provincial Paper Co.

R. D. COLLIER, formerly of Canadian International Paper Co. and Quebec North Shore Paper Co., has joined the Canadian association's woodlands staff.



FMP 12'D x 45'L M-Bar Drum
in Springfield Mill

FMP EQUIPMENT IN WEYERHAEUSER MILL

1 12'Dx45'L Barking Drum

3 Digester Circulating and Indirect Heating Systems

1 Blow Steam Heat Recovery Plant

1 Relief Steam Condenser

1 Bergstrom Tower for Treatment of Effluent

FIBRE MAKING PROCESSES, INC.

Russ Building, San Francisco 4 — Tribune Tower, Chicago 11

RALPH HAYWARD, president of the KVP Co., subsidiary at Espanola, Ont., of Kalamazoo Vegetable Parchment Co., was host at Espanola recently to a group of Canadian government officials from Ottawa and bankers and business men from the United States.

R. E. SIMKINS, formerly of KVP Co. at Espanola, Ont., has been appointed resident engineer for Nanaimo Sulfate Pulp, Ltd., Vancouver, Island.

RALPH JOHNSTON, for many years mill manager with E. B. Eddy Co. in Hull, Que., and Ottawa, Ont., is associated with Brompton Pulp & Paper Co., East Angus and Red Rock.

J. C. MONTY, mill manager for Canadian International Paper Co., at Gatineau, Que., for several years, has been seriously ill.

C. R. SILVERSIDES, for the past three years engaged in woodlands research for the Canadian association in Montreal, has joined the staff of Abitibi Power & Paper Co. in Toronto under direction of General Woodlands Manager *C. B. DAVIS.*

NILES ANDERSON, formerly with Marathon Paper Mills of Canada, and a well known figure in the industry on the west coast as well as in Eastern Canada, is now representing Air-Vac Steam Control System at 106 Adelaide Street West, Toronto.

J. HAROLD FALLS, formerly townsite manager for Pacific Mills, Ltd., at Ocean Falls, has been appointed personnel manager for Columbia Cellulose Co. at Port Edward, B. C.

F. A. SABBATON, president of Dryden Paper Co., died in his 79th year at Grand Mere, Que., Oct. 12. Born in Troy, N. Y., Mr. Sabbaton went to Canada in 1902 as manager of the old Laurentide Paper Co., and with George Cahoon pioneered the scientific development of the industry in that part of Canada. He was former vice president of Laurentide, joined Dryden in the early 1920's.

C. W. E. LOCKE, resident manager of Pacific Mills, Ltd., at Ocean Falls, B. C., accompanied by his wife, has been on an extended tour of Europe this summer, visiting the Scandinavian countries, the United Kingdom and Switzerland, where Mrs. Locke was born and spent her childhood.

F. A. DOWLER, vice president of Alberta Pulp Mills, Ltd., announced recently that construction of his company's proposed $9,000,000 kraft pulp mill will be started this fall.

ROBERT J. FILBERG, vice president, Canadian Western Timber Co., addressed a service club at Campbell River, Vancouver Island, recently, describing his company's plans for a $40,000,000 dissolving pulp mill at nearby Duncan Bay, B. C. Power will be provided by the Campbell River plant.

H. C. FITZJAMES, manager, Pacific Coast Pipe Co., Vancouver, B.C., who has been traveling among pulp and paper mills east and west for the past quarter century, is going to England this fall. He has booked passage on the Queen Elizabeth.

MAJOR JAMES E. HAHN, president of John Inglis Co., Ltd., Toronto, went panther-hunting in Pakistan during a recent visit in connection with the pulp mill his company is building in Chanda, Central India. The major and 160 native beaters went after a marauder and Major Hahn brought the animal down with one shot.

LEW CORCORAN, general superintendent, Anglo-Canadian Pulp & Paper Mills, Ltd., was one of the executives of his company whose portrait was sketched by Ralph Sallon, noted London Mirror cartoonist, during a recent visit to Quebec.

C. A. LAVERTY has been appointed electrical superintendent, Anglo-Canadian Pulp & Paper Mills, Quebec., replacing *KEN McCONOMY,* recently appointed mill manager at Gaspesia Sulfite Co., Chandler, Que. He's an authority on Eskimo life, having spent several summers with Arctic survey parties in Labrador.

J. C. DANIELSON and *S. B. HEGHARDT,* Swedish foresters, have been spending a few days in British Columbia consulting with *ROBERT J. FILBERG,* vice-president of Canadian Western Timber Co., regarding the wood handling program for that company's projected $40,000,000 dissolving pulp mill at Duncan Bay, Vancouver Island.

HERB CAMP has been appointed master mechanic at the Ocean Falls plant of Pacific Mills, Ltd. He was previously with Crown Zellerbach's mill at Camas, Wash.

Crawshaw of Western Gear Addresses Crown Z Meeting

Roy Crawshaw manager of engineering and sales for Western Gear Works, Seattle, was principal speaker at a dinner meeting of a large group of engineers and maintenance men from Crown Zellerbach mills on Oct. 4 in the Lee Hotel, Port Angeles.

Mr. Crawshaw discussed gearing and its applications in pulp and paper, in the oil industry, marine industries and on printing presses, and showed slides. His listeners were drawn from mills and engineering offices from Ocean Falls, B. C., to Lebanon, Ore.

Clarence Bruner, of West Linn, retired mill manager and now special consultant, was toastmaster. Les Warwick, plant engineer, and Merle Cashman, personnel supervisor, at Port Angeles, were in charge of a two-day program for the mill men.

NPTA Engages Styles and Goodridge

In a move to expand field activities of the National Paper Trade Association and to strengthen its capacity to serve members through direct contacts, two well known paper men, Stanley O. Styles and John E. ("Ned)" Goodridge, have been named to the national staff as assistant secretaries, according to Executive Secretary W. G. Leathers.

Mr. Goodridge will concentrate primarily on Wrapping Division problems, while Mr. Styles will devote his attention largely to the Fine Paper group.

Mr. Styles for 36 years was associated with the Martin Cantine Co. of Saugerties, N.Y., and more recently with Hollingsworth & Vose Co. at Walpole and West Groton, Mass. He is a past president of the Salesmen's Association of the Paper Industry and of the Paper Club of New York. Mr. Goodridge was until recently with the paper division of Continental Can Co.

A LOBDELL No. 5 GHV ROLL GRINDER...

is grinding a calender roll prior to its installation in a calender stack. Modern plants choose *Lobdell Roll Grinders* because these improved machines reduce cost and save valuable time in reconditioning couch, press and other rolls . . . *assure faster grinding to close tolerance accuracy*. For complete specifications, write for our Catalog.

PAPER MILL MACHINERY DILL "T-H" SLOTTERS
FORGING HAMMERS ROLLS FOR ALL INDUSTRIES

LOBDELL COMPANY ESTABLISHED 1836 WILMINGTON 99, DEL.

Railway Shop Named In Honor of J. H. Friend

Major J. H. Friend of Mobile, Ala., vice president and general manager, Southern Kraft Div., International Paper Co., served for years as an executive of the Atlanta and St. Andrews Bay Railway Co., which in addition to serving Panama City, Fla., served as connecting link for shipments of paper to the outside world for Southern Kraft. Recently, when the railway had completed a new diesel engine shop, it dedicated the structure to the major and it bears a plaque with the name "J. H. Friend Shop" of the railway on it.

He Goes to Paper Meetings For "Vacation Trips"

W. J. McCarthy, of the News Syndicate Co., Inc., Astoria, N. Y., who attended the Technical convention in Portland, Ore., and was a registered delegate, says he goes to paper industry meetings as "just a personal hobby." He was one man there who was definitely not there on business—he just "likes to spend vacations at paper meetings," he says.

Richmond Heads ESCO School; Kirby, Chief Engineer

Harry H. Richmond, for several years chief engineer of Electric Steel Foundry Co., Portland, Ore., has been relieved of his duties as head of engineering department to enable him to develop a comprehensive integrated job training program for personnel of the ESCO organization. Mr. Richmond's new title is director of training and education. W. B. "Ben" Kirby, who became affiliated with ESCO in 1935, has been named chief engineer.

The training and education department of the organization was set up to meet wants existing in companies having branch offices. Primarily intended for the betterment of each employe, technical information from engineering department will be passed on to all personnel concerned, according to Mr. Richmond. He plans setting up a comprehensive program comparable to college-level studies. This industrial institute project comes as result of his deep interest in the work and its need, a study on which he has already devoted extensive effort and consideration.

Governor's Safety Award For Camas, Wash., Mill

At the recent Governor's Safety Conference held for Washington industries in Olympia, Wash., Gov. Arthur Langlie presented "the governor's safety certificate" to the Camas, Wash., mill of Crown Zellerbach Corp., with J. F. Robertson, safety supervisor at that mill, receiving it. About 700 delegates witnessed the ceremony.

The ceremony was for the "most consistent and successful" improvement in safety over a five-year period in all the 20-odd state pulp and paper mills, taking into account both severity as well as frequency of accidents.

New Zealand Going Ahead With State Mill

The New Zealand government is preparing to go ahead with its proposed state-owned pulp and paper mill at Murupara, on the east coast of North Island, according to Clarence Skinner, the dominion's minister of forests. Cost is estimated at 14,000,000 pounds sterling. Mr. Skinner investigated the industry of Canada and the United States during a recent tour. He said he hoped Canada and the U. S. would contribute technical know-how and personnel.

Hurter Engineers Plan Pakistan Mill

A. T. (Fred) Hurter, head of Stadler, Hurter & Co., pulp and paper mill consulting engineers of Montreal and New York, says his organization has completed its report concerning the development of a pulp and paper industry in East Bengal, Pakistan, using bamboo as raw material.

The mill will have an initial capacity of 20,000 tons of various grades of paper other than newsprint.

J. D. Zellerbach Sees PULP & PAPER in Italy

A note from J. D. Zellerbach, president of Crown Zellerbach Corp., San Francisco, who is on leave this year while serving as the director in Italy for the European Recovery program, reports that he has seen copies of **PULP & PAPER** in the Italian paper mills which he has visited.

He is located in offices in Rome, but recently visited Genoa to welcome the 1,000th ERP ship to arrive in Italy. He commented that ERP shipments, which includes machinery and equipment for some of the largest paper mills, have tended to stabilize prices and "inject confidence into Italy's economy."

Masonite Corp. Resumes Operation

Masonite Corp., Laurel, Miss., manufacturers of wall-board from peeled pulpwood resumed operation on August 30 after having been closed by a strike for 151 days. The strike end came on secret balloting following a public meeting called by business and civic leaders of a community economically paralyzed by stoppage of a $100,000 per week payroll. In returning to work employes accepted a 40-hour week instead of 48 hours and wage rate increase of 2c per hour, basis wage rate being 96c per hour. Paid holidays include Labor Day, Christmas Eve and Christmas Day, and July 4th. The contract runs to December 31, 1950.

New Mill for Ceylon

Plans for a paper mill in Ceylon are reported, but no details are given, in a U. S. government bulletin. Ceylon did have a small paperboard mill 50 miles north of Ceylon but it went broke and closed. Presently neither pulp nor paper are made in Ceylon. Imports probably will total 10,000 tons in 1949.

Quebec Government Now Owns Pulp Mills

Having failed to dispose of the property to private interests, the Quebec government has formally taken over the assets of Quebec Pulp & Paper Corp. for $1,500,000. It has two groundwood mills in Quebec.

The company went into bankruptcy in 1942 and several prospective deals were negotiated in the interim, none of them materializing. Holders of the 70,000 preference shares are to receive $23 a share. The company is reported to have 666 square miles of freehold timber, 131 square miles of forest concessions and two waterpower sites

What the government intends to do with the property remains to be seen. The mill at Chicoutimi has been idle for some time, and the Val Jalbert mill is being dismantled.

Two New Mills Built in Philippines

A recently completed mill in Bias, Negros Occidental, Republic of the Philippines, has commenced production of medium and low-grade bond paper. This mill has an inexpensive and readily available supply of pulp from bagasse, as it is situated in the heart of a sugar-producing area.

A government-owned Kraft wrapping mill and bag plant near Manila has opened. According to competent sources, the cost of wood pulp may make it difficult for the products to compete with imports from the United States.

Swaziland Mill Plan

A $25,000,000 paper mill is to be built in Swaziland, 12 miles from the Transvaal border in South Africa, according to plans announced by the Colonial Development Corp. An extensive forest area has been placed under concession.

AND AGAIN...
IT'S *Kalamazoo*
10
Tile Stock Chests Completely Installed by Kalamazoo at Modern, New Weyerhaeuser Kraft Mill

In building its new kraft containerboard mill at Springfield, Ore., Weyerhaeuser Timber Co. wanted strong stock tanks that would clean easily — require no painting and minimum maintenance — and yet cost no more than inferior types. They chose Kalamazoo glazed tile tanks, as so many paper manufacturers are doing. Shown above are 3 of the 10 Kalamazoo stock tanks that help give the Weyerhaeuser plant 150-ton-per-day production. Each tank is 19,000 gallons and holds 9500 lbs. air dry pulp at 6% consistency.

When you want to keep tank and stock chest costs down, consult Kalamazoo.

WRITE FOR LITERATURE

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For over half a century, master craftsmen have been perfecting experience-proven manufacturing techniques . . . another reason why *Appleton Wires are Good Wires*

APPLETON WIRE WORKS, INC.
APPLETON, WISCONSIN

BLOEDEL, STEWART & WELCH LIMITED

VANCOUVER, B.C.

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PACIFIC COAST LUMBER
UNBLEACHED KRAFT PULP
RED BAND CEDAR SHINGLES
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Large Stands of Virgin Timber

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Pulp Sales Agents:
UNITED STATES: THE MEAD SALES COMPANY, INC., 230 Park Avenue, NEW YORK, N.Y.
UNITED KINGDOM: PRICE & PIERCE LIMITED, 1058 Sun Life Building, MONTREAL, P.Q.

New Celery Wrap Developed by Paterson Pacific

C. G. "Ben" Bennett, with the Paterson Pacific Parchment Co., San Francisco, for the past 22 years, has developed a celery package which holds the stalk in shape and clearly displays the packers brand name. The wrap is a three-inch wide band of high wet strength paper called "Benband," and is produced by the Paterson Pacific Parchment Co. Mr. Bennett, manager of the coating and laminating department also developed water insoluble inks containing heat-sealing components that combine with the thermo-sealing waterproof adhesive coating. Special machines to band premium celery are called "benbanders."

Ray F. Barsotti and Paul S. Tarantino, owners of Ghisellin Bros., large shippers of celery, said consumers prefer the new pack, as stalks were not cut by the bands, and no rubber bands or wires or strings are used.

General Chemical Issues New Products Book

A new 175-page illustrated General Chemical Products Book, published by General Chemical Division of Allied Chemical & Dye Corp., 40 Rector St., New York 6, is now available. It was published early this summer and has already found wide distribution throughout the chemical process industries. Since the book contains a great deal of data on industrial chemicals not available elsewhere, it has found a place in many permanent reference libraries.

Hooker Promotes Coleman

David M. Coleman has been promoted to the sales development department of the Hooker Electrochemical Co., Niagara Falls, N. Y. J. S. Coey, manager of sales development, announced that Mr. Coleman will handle technical correspondence for all Hooker chemicals. A graduate chemist of Worcester Polytechnic Institute, Mr. Coleman came to Hooker in 1943.

American Cyanamid Posts

American Cyanamid Company announces the appointment of Dr. L. P. Moore as manager of its New Products Development Department. The firm also announces the appointment of Dr. E. W. Cook as its European technical representative.

New C-Z Plant

New office building and distribution plant of the Salt Lake City Division of the Zellerbach Paper Co. was opened last month. On hand were Bruce C. Garrison, manager, Salt Lake; H. L. Zellerbach, president; King Wilkin, vice president and general manager, and E. A. Breyman, senior vice president.

FOR SALE

Complete suction press section and two plain press sections — unused — 94" face bottom rolls. Reply Box P&P-52, Pulp & Paper, 71 Columbia St., Seattle 4, Wash.

FOR SALE

Hydropulper for sale—ten foot Dilts Type.
Lockport Cotton Batting Co.
Lockport, New York

Ads in PULP & PAPER Win National Prize

The series of industrial advertisements known as "The Standard Engineer's Case File" and "The Standard Engineer's Report," published by **PULP & PAPER** has won second prize in a national selection made by the Industrial Advertisers Association.

Basis of the award was "for the campaign which in the opinion of the judges is of outstanding excellence in its planning and execution." Rubberset Co. won first prize.

M. Anthony Mattes, advertising manager for Standard of California, wrote **PULP & PAPER**: "The combination of the advertisements and the media used has brought us outstanding results."

JUNIOR EXECUTIVE

Forestry graduate, 36, with successful 15-year record in woods management, production, and preparation will give unselfishly of time and ability for opportunity to assist top executive in paper manufacturing and general administrative duties. Reply Box P&P-56, Pulp & Paper, 71 Columbia Street, Seattle 4, Wash.

WANTED—SALES ENGINEER PULP AND PAPER EQUIPMENT

Exceptional sales opportunity exists for a man with a solid knowledge of the mechanical requirements of the Pulp and Paper Industry. Familiarity with the processing equipment involved in the Pulp and Paper field is essential; also some technical knowledge in the design of such equipment would be helpful. The man selected should have a successful sales record and should be well known in the industry. Your reply, which will be kept confidential, should give full information. Salary open.

Reply Box P&P-55, Pulp & Paper, 71 Columbia Street, Seattle 4, Wash.

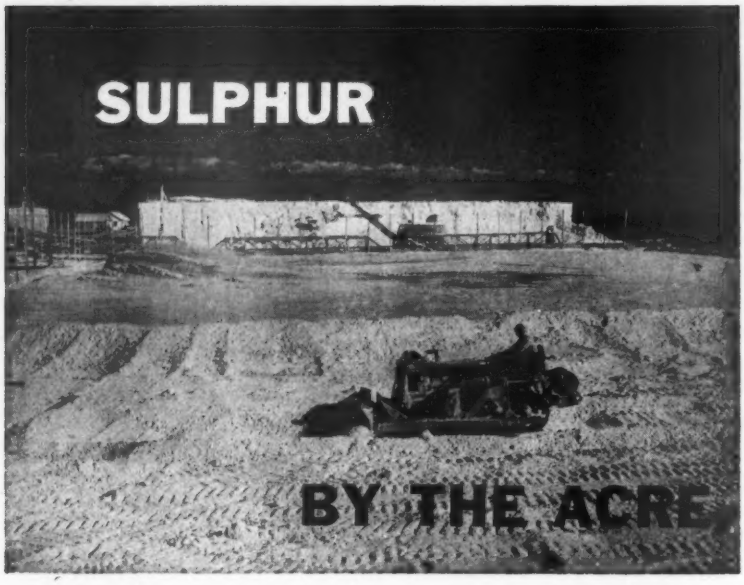
GENERAL PULP MILL FABRICATIONS:

Stainless Steel Piping—Head Boxes—Flumes—Tanks—Flow Boxes—Separators—Heat Exchangers—Converters—Expansion Joints—Coils, Etc.

36" STAINLESS STEEL MANIFOLD

ALASKAN COPPER WORKS

3608 EAST MARGINAL WAY
SEATTLE, WASHINGTON



Sulphur, mined from its Gulf Coast deposit, will be stored in this vat of Freeport Sulphur Company at its Grande Ecaille property in Louisiana. Sulphur storage blocks of solid yellow stone often rise as high as 50 feet and stretch over as much as 5 acres.

FREEPORT SULPHUR COMPANY
OFFICES: 122 East 42nd Street, New York 17, N. Y.
MINES: Port Sulphur, Louisiana • Freeport, Texas

SULPHUR SERVES INDUSTRY

PLASTIC PRINTING PLATE
Chicago Group Hears Report

A plastic printing plate which, under test, has produced more than 60,000 impressions without the need of additional make-ready was described by E. M. Paulsen, Plastic Printing Plates, Inc., Oak Park, Ill., at the Sept. 19 meeting of the Chicago Technical Section, at the Chicago Bar Association.

The plate is a thermosetting plastic plate made for letter press printing and used in the same manner as any highgrade metal plate, Mr. Paulsen stated. Thermosetting, as defined by Mr. Paulsen, means "hardening into an infusible and insoluble mass of heat."

The procedure in the making of these plates is similar to metal plate making but materials employed, equipment used, and special techniques are entirely different.

"The matrix material, which is a Bakelite thermosetting resin is heated until it reached its sofest (flow point) condition at which time an impression of the type form or master plate is made to the required depth in a hydraulic press with heated platens and remains there under pressure until the matrix becomes hard or 'cured' at which time it is separated from the form," said Mr. Paulsen.

The material from which the actual printing plate is made is the same thermosetting resin as that used for the matrix. The procedure explained for making the matrix is repeated in producing the plate. After the plate has been moulded it is trimmed and mounted in the usual manner.

"The thermosetting phenolic resin as formulated by the Bakelite Corp. will not burn or support combustion; will never soften; will not change or lose dimensions; will not chip or dent easily; will not creep and will reproduce with fidelity the finest hair lines and dots of originals."

A very large and well known producer of containers in the Chicago area made this report:

"In our experiments we put a squeeze on your plastic plates on .018 point white-coated paper stock and increased the pressure to the point of going through the paper board. We then applied our strongest type wash, which had absolutely no effect on them. We are pretty tired of chrome plating or nickel plating our plates, although we do increase our impressions, but you know and I know, those plates are only as strong as the material underneath. In addition they eventually dish out, thereby damaging our rollers. Now your plates convinces us longer runs can be attained and your wearing qualities indicate a uniform wear over all. And to be frank, a run of 800,000 impressions would not surprise us at all."

After this report was made, this paper firm ran a plastic plate with seven metal plates. Results:

"After 285,000 impressions the metal plates showed considerable wear and the plastic plate was practically as good as when it was put on."

Gladding, McBean Names Mahoney

James W. Mahoney, vice president, Gladding, McBean & Co., has been named general manager of the company's Central Division with headquarters in San Francisco, it was announced recently by Fred B. Ortman, president. Mr. Mahoney will be in charge of activities in North California, South Oregon, Nevada, Utah, Hawaii and Philippines. He announces closing of the company's Livermore, Calif., fire brick plant and its transfer to the Pittsburg, Calif., refractories, one of the most modern plants of its kind in the country.

Rosenblad to Become United States Citizen

Kurt Rosenblad, head of Rosenblad Corp. of Stockholm, inventor of the evaporator for calcium base sulfite systems and of a spiral heat exchanger, has migrated to the U. S. with his wife and five children, bought a Connecticut home and opened offices of the newly formed Rosenblad Corp. of the U. S. in the RKO Bldg., New York. Gus Hellstrom of Montreal continues as his representative in Canada.

For the testing of the Rosenblad one-effect evaporator for calcium base sulfite recovery system at Appleton, Wis., previously reported in this magazine, Nils Eklow, 25-year old student at the Royal Institute of Technology, Stockholm, has been assigned to the experimental project at the Interlake mill of Consolidated Water Power & Paper Co. in Appleton. This project is being sponsored there by a group of Wisconsin and Michigan mills.

Mr. Eklow represents the Rosenblad Corp. of New York and Stockholm but U. S. rights to the evaporator have been sold to General American Transportation Corp., New York. There is expected to be less scaling in this evaporator than has occurred in past experiments with recovery in calcium base sulfite pulping. But conclusive tests are yet to be run. Economically, the Rosenblad system has found considerable favor in Sweden for energy and chemical recovery because of the high cost of coal in that country.

Report on World Congress Held at Helsinki, Finland

A 27-page report has been issued on the Third World Forestry Congress which took place in Helsingfors, Finland, this past summer. It reveals a spirited debate on tropical forests, with one group favoring extensive felling of existing species and substitution on a large scale of more valuable species. Exchange of seeds and plants between countries was recommended by the Congress.

The Congress recommended development of chemical industries based on wood; increased use of leaf trees, including tropical trees, for pulp; compilation of a forest dictionary in several languages including Russian; compilation of more complete forest statistics by the FAO of the United Nations.

A "Change of Scenery" For Personnel Supervisors

So that their personnel and safety men can see what is done in other mills in the organization, Crown Zellerbach Corp. had several of them swap jobs for a three-months' period.

Don Osborne, assistant personnel and safety supervisor at Port Townsend moved to Port Angeles; James Phillips, who held that post at Port Angeles, shifted to West Linn; George La Husen, West Linn safety supervisor, moved over to Camas, and Charles Nordstrom of the Camas personnel staff, replaced Mr. Osborne at Port Townsend. The experiment in new environment will be over Nov. 15, when they are slated to snap back to "as you were."

G-B's records speak for themselves. Performance records of installations in Canada and many foreign countries, as well as in every section of the United States, testify to G-B's achievements in the design and construction of black liquor evaporators. These installations are setting new standards of performance, economy and durability.

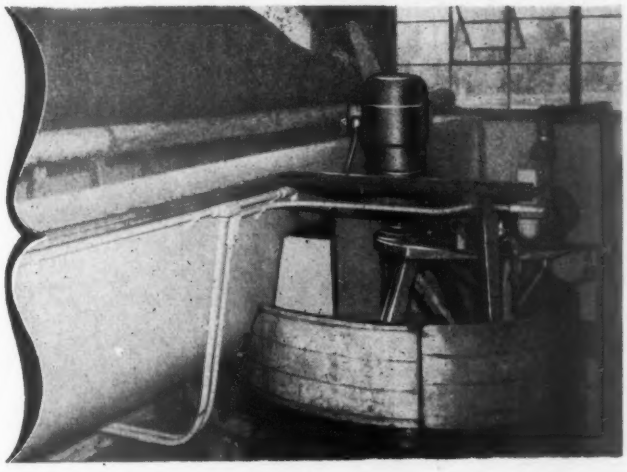
This excellent record of achievement sets G-B's present high standards, and a staff of competent engineers, with modern and complete shop facilities, fully qualify G-B to serve the pulp and paper industry.

To insure top performance on all installations, G-B maintains an intensive service program—providing regular check-up calls by experienced engineers.

If black liquor evaporation cost is a problem in your plant, call on G-B for recommendations. Engineers are available for consultation without obligation. Complete information on request.

GOSLIN-BIRMINGHAM
MANUFACTURING COMPANY, INC.
BIRMINGHAM, ALABAMA
NEW YORK: Goslin-Birmingham, 350 Madison Ave.
CHICAGO: F. M. deBeers and Associates, 20 N. Wacker

CONSISTENTLY IN EVIDENCE!



AGAIN IT'S TRUE . . . . . Whenever trade news features a splendid new mill, it's usually a mill that features DeZURIK CONSISTENCY REGULATORS.

WRITE FOR OUR DETAILED REGULATOR BULLETIN

For years, DeZurik REGULATORS have enjoyed preference and leadership in consistency controls because of their remarkable accuracy, their uncomplicated performance, their whole-volume function and their adaptability to any processing situation. Given any job to do, they do it **better longer.**

DeZURIK SHOWER CO.

SARTELL -- MINNESOTA

earlier operation

earlier profits

when EBASCO does the job

After you have your timber rights under control, call on EBASCO to get your new paper machine in operation at the earliest possible moment.

EBASCO engineers have the experience. They've installed 35 paper machines in the past 20 years. They have the skill and background for everything from original design to complete installation.

Here is a recent accomplishment. Working with an existing paper machine, they recently planned, designed, constructed and installed equipment for a modernized paper mill in only 16 months. Call on them for your next job—expansion, modernization or complete new paper mill.

If you'd like a complete outline of EBASCO's individualized services as engineers, constructors, and business consultants, write for our booklet THE INSIDE STORY OF OUTSIDE HELP. We'll send it to you promptly.

EBASCO SERVICES INCORPORATED

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New York 6, N. Y.

ENGINEERS · CONSTRUCTORS · BUSINESS CONSULTANTS
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Design & Construction · Financial · Industrial Relations
Inspection & Expediting · Insurance & Pensions
Purchasing · Rates & Pricing · Research · Sales & Marketing
Systems & Methods · Taxes · Traffic

WOOD PULP OUTLOOK

Address by L. K. Larson

(Continued from page 32)

to the probable effect of the devaluation of Swedish, Finnish, Norwegian, and Canadian currencies upon the prospective supply of wood pulp from these countries and upon the domestic price structure.

"It is true that a 30% devaluation will permit Scandinavian producers, if they so elect, to sell their pulp in this market at a discount of 30% from current dollar prices and still get an equivalent return in terms of their own currencies. It is also true that the purpose of devaluation was to enable soft currency countries to sell competitively in the dollar markets, and ultimately to balance their dollar accounts through increased sales.

"Since imported pulps, prior to devaluation, were already fully competitive in this market, most foreign pulp producers have apparently elected, for the time being at least, to maintain their dollar prices, thereby deriving from sales in this market a proportionately higher return of their own currency.

"Presumably, the foreign supplier, in arriving at this decision to maintain his dollar prices, despite devaluation, was influenced primarily by the following considerations:

"1. The present favorable short-term outlook for world pulp demand and particularly U. S. demand.

"2. His own cost position. The Scandinavians have reportedly not been happy about recent world price trends, and many feel that currency devaluations have been largely discounted by prior price reductions. For Scandinavian bleached sulfite, for example, these prior price reductions ranged from 28% to 40%; on Canadian pulps they were almost 50% greater than the amount of the subsequent Canadian devaluation. To meet pre-devaluation competition, as well as for the purpose of affording themselves a tax advantage, some Swedish producers are reported to have marked their wood inventories down substantially at the end of 1948. This move would appear to indicate the need for a higher krona return to meet current and prospective wood costs.

"3. Fear that American producers might nullify the prospective beneficial effects of price cuts by meeting foreign competition.

"4. The certainty of rising costs in foreign countries due to the reserve inflationary effects of devaluation."

Mr. Larson reviewed postwar economic trends and inventory stabilization. For unbleached sulfite for the last half this year, he forecast a demand 50% above the first half of 1949. For unbleached kraft he predicted a 40% increase. For bleached sulfite, at least a 9% boost—not counting possible increase from general economic recovery. For bleached kraft, he pointed to an increase in the first half of the year, and foresaw a leveling off.

"Foreseeable demand, in the case of each grade of pulp, for the balance of 1949," he said, "will not exceed the foreseeable level of supply.

"Producers' inventories, world-wide, have been high in relation to last year, but it must be remembered that in the first six months of last year producers' stocks were relatively low because of the heavy concentration of Scandinavian deliveries in the first half of last year. Although producers' stocks may still be relatively high, they have been declining steadily since May. If the present level of world demand is maintained there would seem to be no reason why there may not be an orderly liquidation of these producers' inventories."

DEVALUATION AFTERMATH

(Continued from page 31)

prices wll be higher after the fourth quarter contracts terminate.

Toward the end in Mr. Larson's address he invited attention to the fact that some Swedish producers in 1948 took advantage of a legal right to "write down" their wood inventories. This is a most interesting device which could have serious effect on the future situation. **PULP & PAPER** verified this law through a qualified spokesman at the Swedish Consulate in New York City who stated that it is a fact that any business in Sweden can, according to law, write down its inventory at the end of the year to the extent of their profits or a minimum of one Swedish crown. This may be done for any number of consecutive years, and is one of the most curious business laws in the world. The consulate indicated that its purpose is to assist business and industry against the possibility of lean or depression periods.

Those American pulpmen who take the optimistic view say higher Swedish costs would not permit sharp reductions; their import costs will be higher so their advantage may be short-lived; and that there is now no depression or recession such as accompanied dumping in two periods of the 1930's. Others will dispute each one of these points on various grounds and contend that American mills, even though cutting operation costs, can't compete with drastic price cuts because of their high wage levels.

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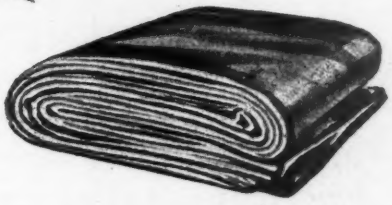

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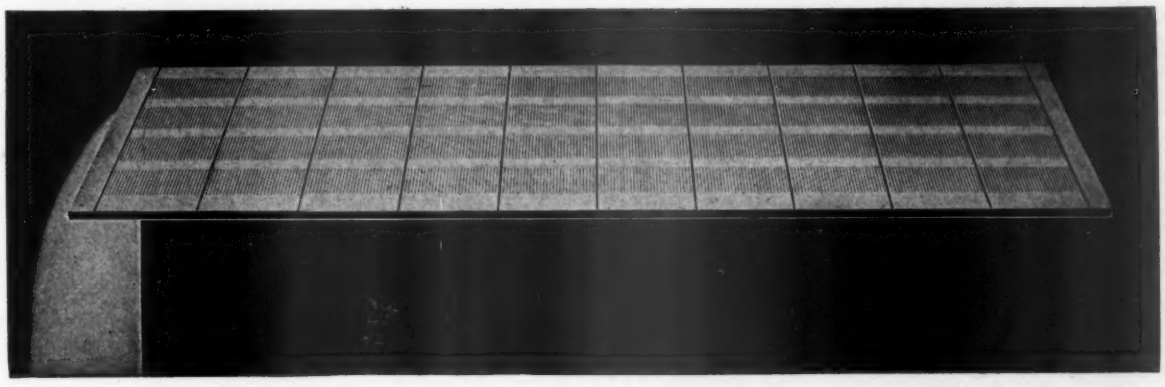

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Portland Convention Was A Financial Success

The final meeting of the Pacific Coast committee which managed all aspects of national technical convention in Portland, Ore., in September, was held Oct 14 at the Multnomah hotel, Portland. R. M. True, treasurer for the convention, reported it was financially successful and all financial obligations had been met entirely by the Coast group.

Co-chairman A. G. Natwick of Crown Zellerbach and Russell J. LeRoux of Weyerhaeuser thanked all subcommittee chairman and members of their committees for their work.

We Stand Corrected! Nearly 800 Were at Portland

There were nearly 800 at the highly successful technical convention in Portland, Ore., in September—biggest meeting of its kind ever held outside New York.

A checkup of figures shows we have to revise upward by 59 the total we reported last month. Officially, the count was 784—540 men and 240 women. Of this number 126 were partial registrations for certain events.

About half of the men were supply and equipment representatives, largely from the east. Mill men preponderantly from the Far West.

Michigan Supts.

Michigan Superintendents will meet on Nov. 17, a Thursday, at Hotel Harris in Kalamazoo. L. G. Jarrett, of J. O. Ross Engineering Corp. with his offices at 201 No. Wells St., Chicago, will speak on: "Mill Ventilation, Its Effects on Drying."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, MARCH 3, 1933 AND JULY 2, 1946

Of Pulp & Paper, published monthly, semi-monthly in April, at Seattle, Washington, for October 1, 1949.

State of Washington, County of King,—ss.

Before me, a Notary Public in and for this State and county aforesaid, personally appeared Miller Freeman, Jr., who, having been duly sworn according to law, deposes and says that he is the business manager of the Pulp & Paper, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the acts of March 3, 1933 and July 2, 1946, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Miller Freeman, 71 Columbia St., Seattle 4, Wash.
Editor, Albert Wilson, 71 Columbia St., Seattle 4, Wash.
Business manager, Miller Freeman, Jr., 71 Columbia St., Seattle 4, Wash.

2. That the owner is:

Miller Freeman Publications, Inc., 71 Columbia St., Seattle 4, Wash.

(Stockholders) Miller Freeman, Kemper Freeman, Wm. B. Freeman, Miller Freeman, Jr., L. K. Smith, W. E. Crosby, Harry P. Cain, all of 71 Columbia St., Seattle 4, Wash.

3. None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear on the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; als that the said two paragraphs contain statements embracing affiants full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

MILLER FREEMAN, Jr., Business Manager.

Sworn to and subscribed before me this 26th day of September, 1949.

G. E. DELAWARE.

(My Commission expires May 20, 1953).